

## **ATTACHMENT 1**

**North Bend P20190030 Application (12.2020) and  
Reference Documents**



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

Application Number: 24721 Permit Number: P20190030 Date Received: 12/17/2020

### Step 1 of 15 - Applicant Information

**Applicant Name:** Birla Carbon **Applicant Type:** INDUSTRY/OTHER  
**Mailing Addr :** 1800 West Commons Court  
Marietta, GA 30062  
Randy Waskul  
**Contact Info:**  
**Phone:** (770) 792-9435 **Fax:** (770) 792-9619 **Email:** randy.waskul@adityabirla.com

### Step 2 of 15 - Agent Information

**Agent Name:** Ramboll US Corporation  
**Mailing Addr:** 1055 St Charles Ave  
Suite 501  
New Orleans, LA 70031  
**Contact Info:** Adam Goodine  
**Phone:** (504) 648-2123 **Fax:** (504) 299-3494 **Email:** agoodine@ramboll.com

### Step 3 of 15 - Permit Type

☒ Coastal Use Permit (CUP) ☐ Solicitation of Views (SOV) ☐ Request for Determination (RFD)

### Step 4 of 15 - Pre-Application Activity

#### a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

☐ No ☒ Yes Date meeting was held: 12/12/2018

Attendees: Randy Waskul Darrell Barbara, Robby Swayze  
(Individual or Company Rep) (OCM Representative) (COE Representative)

#### b. Have you obtained an official wetland determination from the COE for the project site?

☐ No ☒ Yes If Yes, Please upload a copy with your application.  
JD Number: MVN-201801055-SR

#### c. Is this application a mitigation plan for another CUP?

☒ No ☐ Yes OCM Permit Number:



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

### Step 5 of 15 - Project Information

#### a. Describe the project.

Birla Carbon (locally formerly known as the Columbian Chemicals Company) recently secured CUP P20190030 from LDNR to complete additional development at their facility in order to reduce the levels of emissions of NOx, SO2, and particulate matter to the air at their St. Mary Parish Facility as ordered by a federal consent decree. Birla Carbon has slightly revised the design of their seawater flue gas desulfurization plan. Birla Carbon will construct an intake system in the site's barge slip that is located on the Gulf Intracoastal Waterway. Water will be pumped through a series of pipes over the nearby levee, pass the water through the process, and discharge back to the Gulf Intracoastal Waterway. The slip will be maintained through dredging. Details regarding the need for the project, alternatives considered, and the justification for the chosen design option are consistent with the initial application; the requested modifications are outlined within the attached Request for Permit Modification letter appended to this application.

#### b. Is this application a change to an existing permit?

☐ No

☒ Yes

OCM Permit Number: P20190030/P20141334

#### c. Have you previously applied for a permit or emergency authorization for all or any part of the proposed project?

☒ No

☐ Yes

Agency	Contact	Permit Number	Decision Status	Decision Date
OCM				
COE				
Other				

### Step 6 of 15 - Project Location

#### a. Physical Location

Street: 370 Columbian Chemicals Lane Centerville, Louisiana 70522

City:

Parish: Saint Mary

Zip:

Water Body: Gulf Intracoastal Waterway

#### b. Latitude and Longitude

Latitude: 29 40 52.75 Longitude: -91 27 22.87

#### c. Section, Township, and Range

Section #: 1

Township #: 16S

Range #: 10E



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

Section #: 4

Township #: 16S

Range #: 10E

### d. Lot, Tract, Parcel, or Subdivision Name

Lot #:

Parcel #:

Tract #:

Subdivision Name:

### e. Site Direction

From Baton Rouge, take I-10 West toward Lafayette. In Lafayette, take LA 90 South/East, passing Broussard, New Iberia, Jeanerette, and Franklin. In Centerville, take LA 317 South for approximately 5 miles. The facility will be on the left.

**Step 7 of 15 - Adjacent Landowners** - See attached list

### Step 8 of 15 - Project Specifics

**a. Project Name and/or Title:** Birla Carbon FGD Intake

**b. Project Type:** Non-Residential

**c. Source of Funding:** PRIVATE

### d. What will be done for the proposed project?

- |   |  |   |   |
|---|--|---|---|
| <input checked="" type="checkbox"/> Bridge/Road           | <input type="checkbox"/> Home Site/Driveway  | <input checked="" type="checkbox"/> Pipeline/Flow Line          | <input checked="" type="checkbox"/> Rip Rap/Erosion Control |
| <input checked="" type="checkbox"/> Bulkhead/Fill         | <input type="checkbox"/> Levee Construction  | <input type="checkbox"/> Plug/Abandon                           | <input type="checkbox"/> Site Clearance                     |
| <input checked="" type="checkbox"/> Drainage Improvements | <input checked="" type="checkbox"/> Dredging | <input type="checkbox"/> Production Barge/Structure             | <input type="checkbox"/> Subdivision                        |
| <input type="checkbox"/> Drill Barge/Structure            | <input type="checkbox"/> Prop Washing        | <input type="checkbox"/> Vegetative Plantings                   | <input type="checkbox"/> Wharf/Pier/Boathouse               |
| <input type="checkbox"/> Drill Site                       | <input checked="" type="checkbox"/> Pilings  | <input type="checkbox"/> Remove Structures                      |   |
| <input checked="" type="checkbox"/> Fill                  | <input type="checkbox"/> Marina              | <input checked="" type="checkbox"/> Major Industrial/Commercial |   |
| <input type="checkbox"/> Other:                           |  |   |   |

### e. Why is the proposed project needed?

Please see the previously provided Needs, Alternatives, and Justification document attached to this application, that





Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

describes the project need in detail.

### Step 9 of 15 - Project Status

a. Proposed start date: 08/01/2020 Proposed completion date: 08/01/2021

b. Is any of the project work in progress?

☒ No ☐ Yes

c. Is any of the project work completed?

☒ No ☐ Yes

### Step 10 of 15 - Structures, Materials, and Methods for the Proposed Project

a. Excavations

39300 Cubic Yards 31.96 Acres

b. Fill Areas

58650 Cubic Yards 31.96 Acres

c. Fill Materials

<input checked="" type="checkbox"/> Concrete:	2000 Cubic Yards	<input type="checkbox"/> Rock:	Cubic Yards
<input checked="" type="checkbox"/> Crushed Stone or Gravel:	18000 Cubic Yards	<input checked="" type="checkbox"/> Sand:	14000 Cubic Yards
<input checked="" type="checkbox"/> Excavated and Placed onsite :	14650 Cubic Yards	<input type="checkbox"/> Hauled in Topsoil/Dirt:	0 Cubic Yards
<input checked="" type="checkbox"/> Excavated and hauled offsite:	14650 Cubic Yards		



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

☒ Other: Dredged Material Placed Onsite 10000 Cubic Yards

### d. What equipment will be used for the proposed project?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Airboat                            | <input checked="" type="checkbox"/> Bulldozer/Grader | <input type="checkbox"/> Marsh Buggy                                  |
| <input checked="" type="checkbox"/> Backhoe                 | <input type="checkbox"/> Dragline/Excavator          | <input checked="" type="checkbox"/> Other Tracked or Wheeled Vehicles |
| <input type="checkbox"/> Barge Mounted Bucket Dredge        | <input type="checkbox"/> Handjet                     | <input type="checkbox"/> Self Propelled Pipe Laying Barge             |
| <input type="checkbox"/> Barge Mounted Drilling Rig         | <input type="checkbox"/> Land Based Drilling Rig     | <input type="checkbox"/> Tugboat                                      |
| <input checked="" type="checkbox"/> Other: hydraulic dredge |  |   |

### Step 11 of 15 - Project Alternatives

#### a. Total acres of wetlands and/or waterbottoms filled and/or excavated.

1.59 acres

#### b. What alternative locations, methods, and access routes were considered to avoid impact to wetlands and/or waterbottoms?

Please see the previously submitted Needs, Alternatives, and Justification document, that describes the project alternatives in detail.

#### c. What efforts were made to minimize impact to wetlands and/or waterbottoms?

Please see the previously submitted Needs, Alternatives, and Justification document, that describes the project avoidance, minimization, and mitigation measures in detail.

#### d. How are unavoidable impacts to vegetated wetlands to be mitigated?

Please see the previously submitted Needs, Alternatives, and Justification document, that describes the project mitigation plan in detail.

### Step 12 of 15 - Permit Type and Owners

#### a. Are you applying for a Coastal Use Permit?

☐ No ☒ Yes

#### b. Are you the sole landowner / oyster lease holder?



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

☐ No ☒ Yes

- ☐ The applicant is an owner of the property on which the proposed described activity is to occur.
- ☐ The applicant has made reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, a search of the public records of the parish in which the proposed activity is to occur.
- ☐ The applicant hereby attests that a copy of the application has been distributed to the following landowners / oyster lease holders. See attached list.

### c. Does the project involve drilling, production, and/or storage of oil and gas?

☒ No ☐ Yes **If yes, you must attach a list of all state and federal laws and rules and regulations**

### Step 13 of 15 - Maps and Drawing Instructions

Note: OCM Compiled Plats consist of a complete and current set of plats that have been pieced together by OCM using only the most current portions of the plat files provided by the applicant/agent. All out-of-date plats have been excluded.

BirlaCarbonRevisionDesign20201-8.pdf	12/17/2020 02:11:32 PM
LDNRRAI12.16.2020Response.pdf	12/17/2020 02:12:18 PM
BirlaCarbonRevisionDesign_2020_9-16.pdf	07/10/2020 12:55:42 PM
BirlaFGDNAJAnalysis02.2020.pdf	03/02/2020 12:24:04 PM
LDNRPermitModRequest07.2020.pdf	07/10/2020 12:54:11 PM
LDNRRAI01.15.19_Response.pdf	01/29/2019 09:12:56 AM
2018-01055-SRGoodine.pdf	01/11/2019 10:43:30 AM
LDNRRAI09.09.19_Response.pdf	09/20/2019 03:46:31 PM
LDNRPermitModRequest09.2019.pdf	09/06/2019 11:26:51 AM
LDNRRAI02.03.20_Response.pdf	03/02/2020 12:22:49 PM

### Step 14 of 15 - Payment

The fee for this permit is: \$ 100.00

### Step 15 of 15 - Payment Processed

#### Applicant Information



Louisiana Department of Natural  
Resources  
Office of Coastal Management

## Joint Permit Application For Work Within the Louisiana Coastal Zone



U.S. Army Corps of Engineers  
(COE)  
New Orleans District

**Applicant Name:** Birla Carbon  
**Address:** 1800 West Commons Court  
Marietta, GA 30062

To the best of my knowledge the proposed activity described in this permit application complies with, and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.

### Landowners List

**Adjacent Landowner**

**Dahlberg Constance W C/O Portland Harbor Corp**

**3421 North Causeway Boulevard**

**403**

**Metairie, LA 70002**

**Adjacent Landowner**

**JMB Partnership LLC - North Bend Plantation**

**PO Box 33**

**Franklin, LA 70538**

**Adjacent Landowner**

**Louisiana Wetlands LLC**

**PO Box 842**

**Baton Rouge, LA 70821**

**Adjacent Landowner**

**Miami Corporation**

**410 Michigan Ave**

**590**

**Chicago, IL 60611**

**Adjacent Landowner**

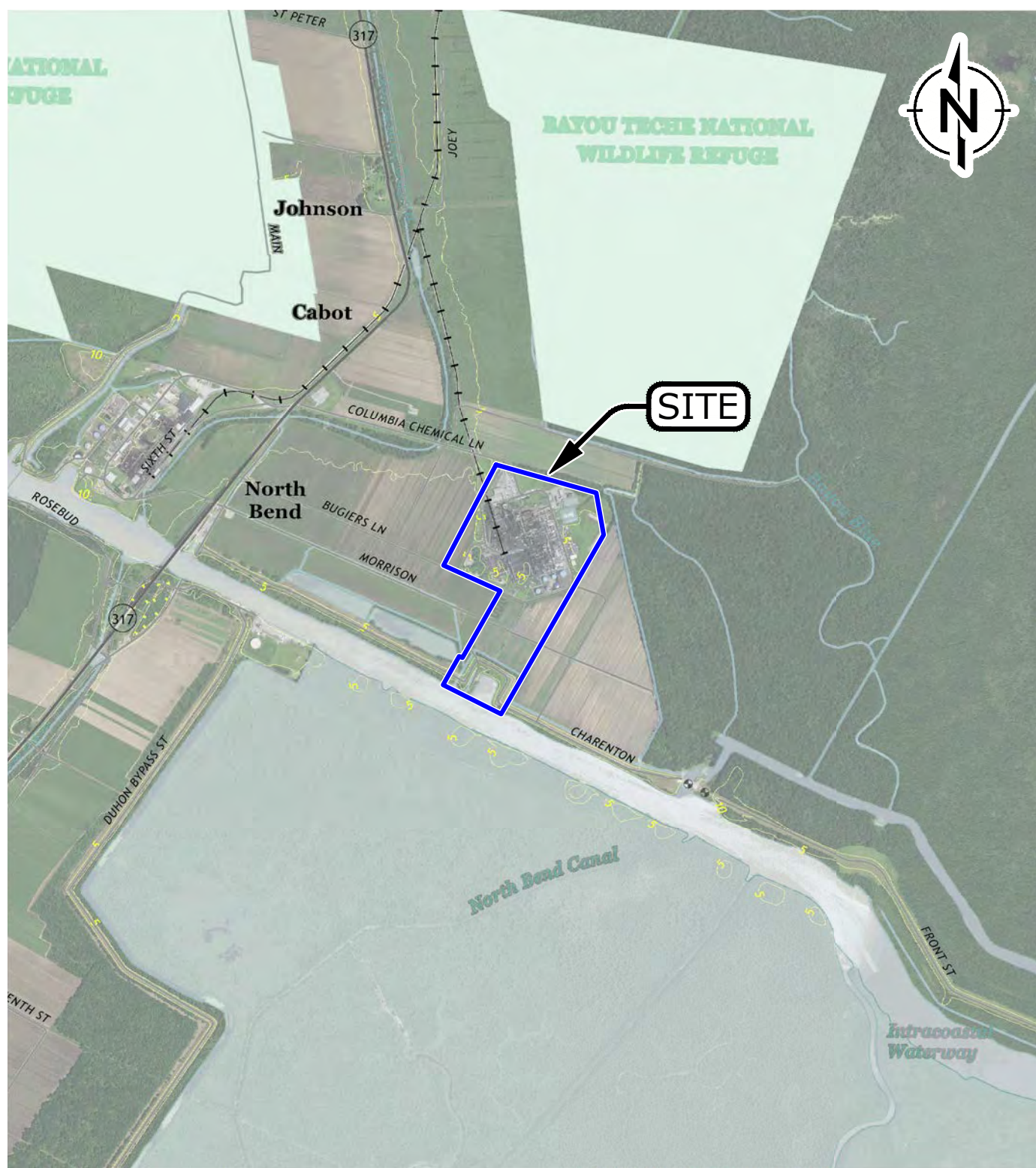
**USA National Wildlife Refuge**

**1874 Century Boulevard**

**420**

**Atlanta, GA 30345**

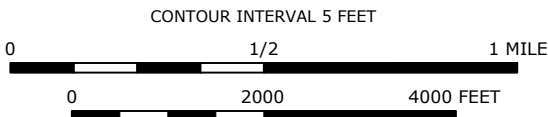
L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\01\_Site Location Map.dwg



**LEGEND:**

—— BIRLA CARBON PROPERTY  
(APPROXIMATE)

**SOURCE:**  
2018 USGS 7.5 Minute Series North Bend, Louisiana Topographic Quadrangle.  
Site Location; N: 29.680355° W: 91.456596° WGS84



QUADRANGLE LOCATION



DRAFTED BY: CKL

DATE: 6/26/2020

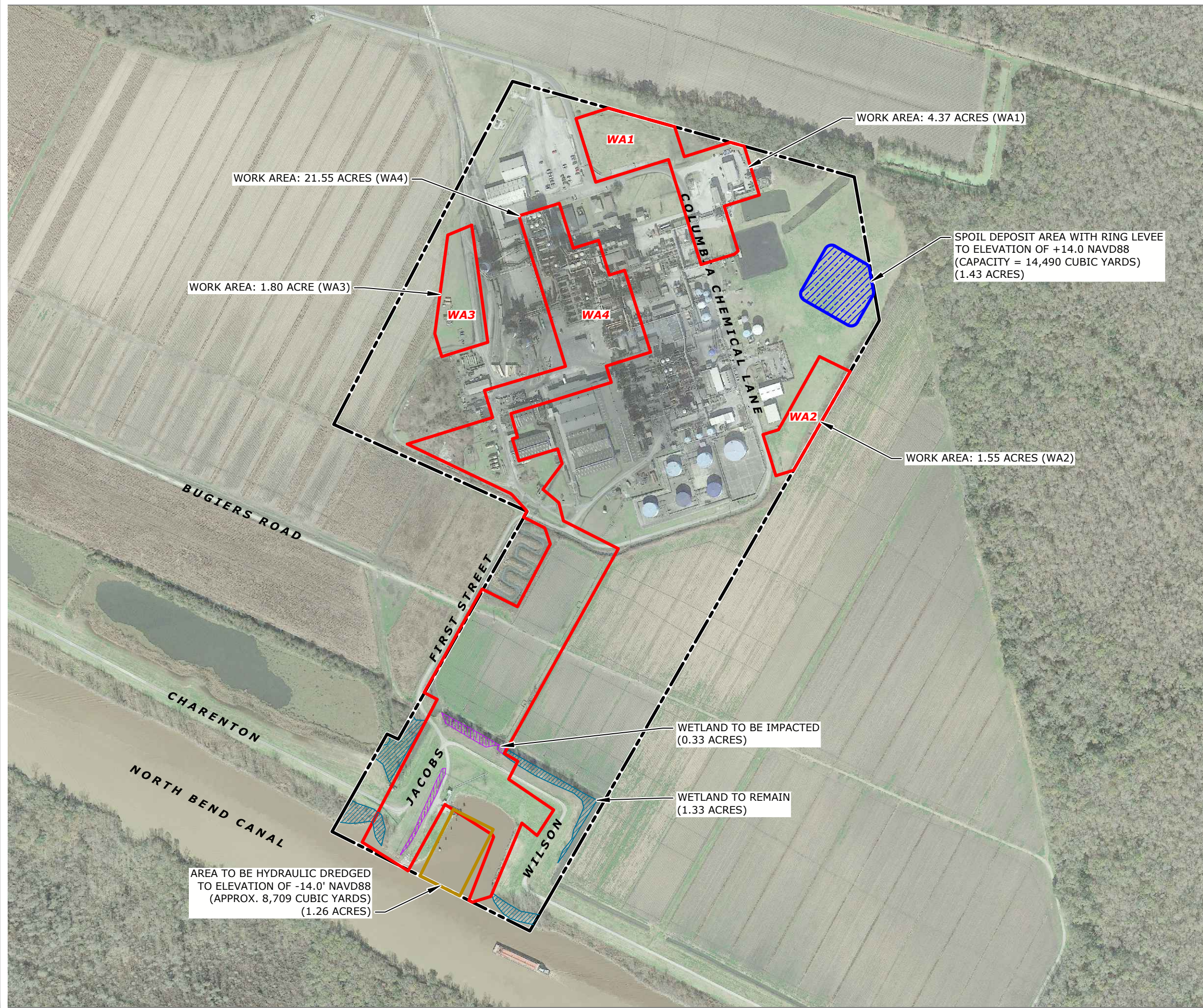
**SITE LOCATION MAP**  
BIRLA CARBON – NORTH BEND FACILITY  
ST.MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN

**FIGURE**  
**1**

1690013666



L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\ 2020-12\02\_Existing Site Layout.dwg



SOURCE: AERIAL IMAGERY: GOOGLE EARTH™, IMAGE DATED 1/24/2018.



LEGEND	
	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	WETLAND TO BE IMPACTED
	WETLAND TO REMAIN
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	PROPOSED HYDRAULIC DREDGE AREA (APPROXIMATE)

- Notes:
1. As-built drawings and/or plats shall have written on them the date of completion of said activities and shall be submitted to the Louisiana Department of Natural Resources, Office of Coastal Management, P.O. Box 44487, Baton Rouge, LA 70804-4487 within 30 days following project completion.
  2. All structures built under the authorization and conditions of this permit shall be removed from the site within 120 days of abandonment of the facilities for the herein permitted use, or when these structures fall into a state of disrepair such that they can no longer function as intended. This condition does not preclude the necessity for revising the current permit or obtaining a separate Coastal Use Permit, should one be required, for such removal activities.
  3. Structures must also be marked/lighted in accordance with U. S. Coast Guard regulations.
  4. In order to ensure the safety of all parties, the permittee shall contact the Louisiana One Call System (1-800-272-3020) a minimum of 48 hours prior to the commencement of any excavation (digging, dredging, jetting, etc.) or demolition activity.

0 400  
SCALE IN FEET

**EXISTING SITE LAYOUT**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



FIGURE  
2

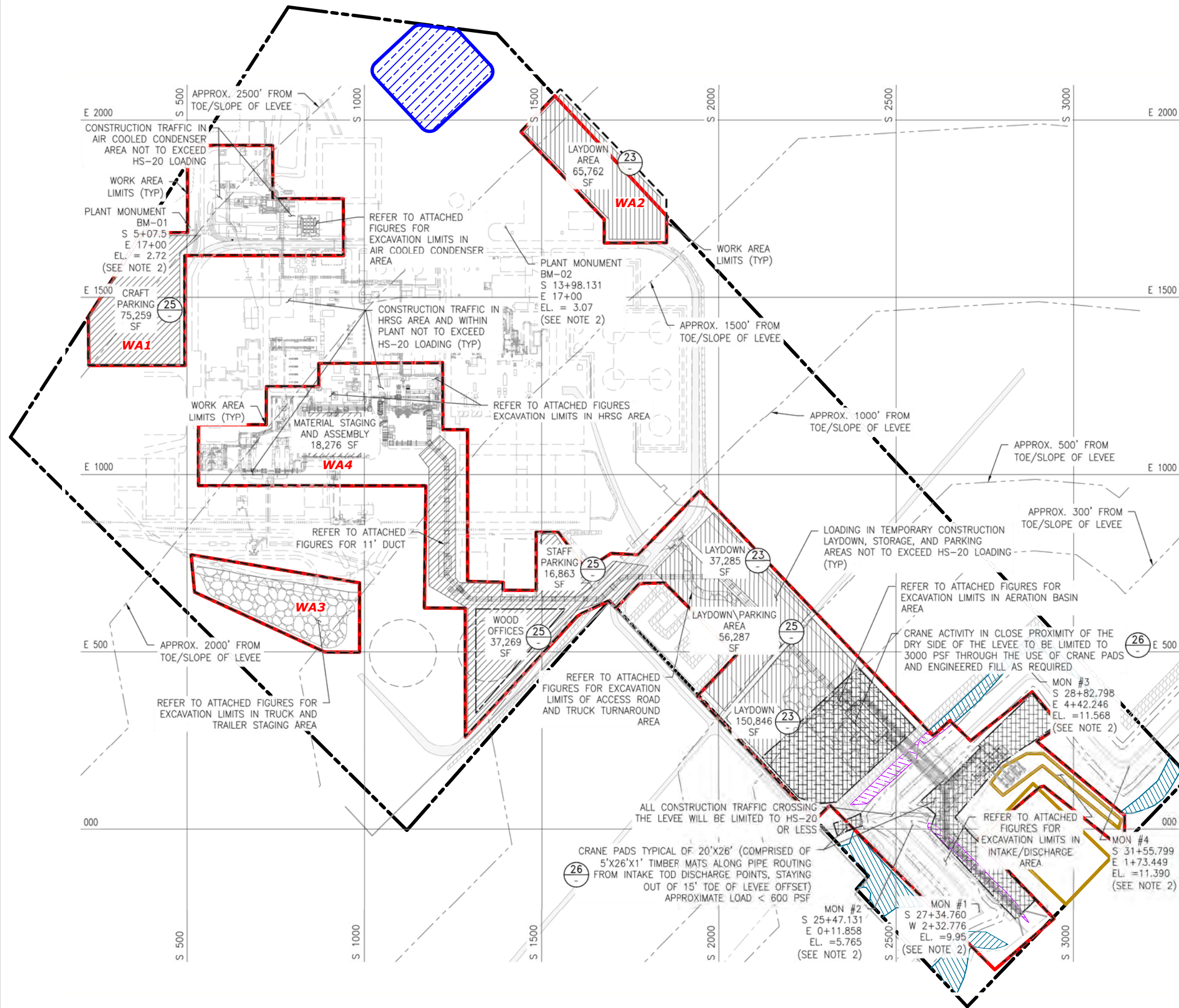
DRAFTED BY: CKL

DATE: 12/16/2020

1690013666



L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\03\_Temporary Construction Areas Excavation Sketch.dwg



LEGEND	
	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	WETLAND TO BE IMPACTED
	WETLAND TO REMAIN
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	PROPOSED HYDRAULIC DREDGE AREA (APPROXIMATE)
	CRUSHED AGGREGATE
	CRANE PAD AREA OVER CRUSHED AGGREGATE
	CRUSHED AGGREGATE (SAND BASE)

0 300  
SCALE IN FEET

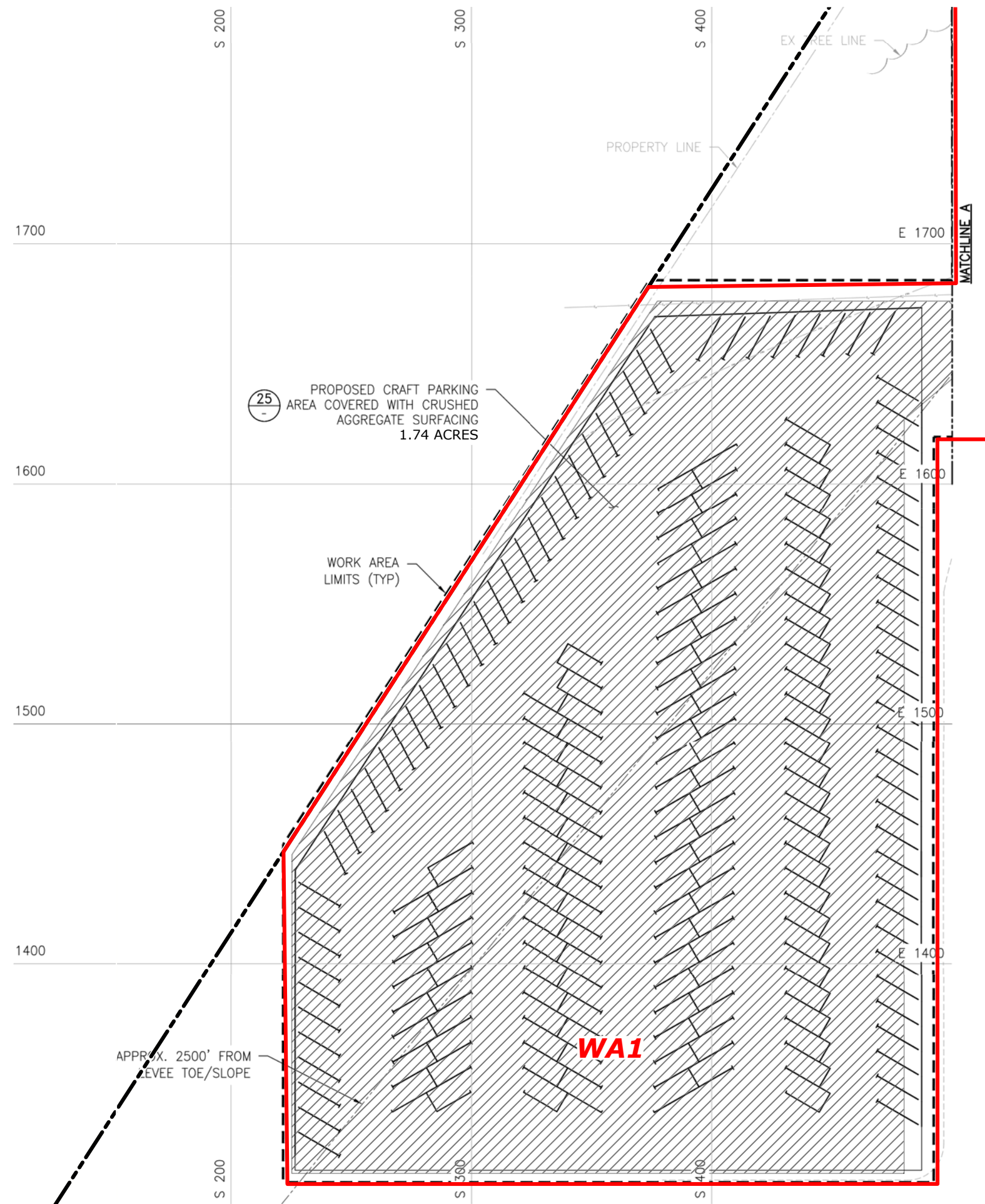
# TEMPORARY CONSTRUCTION AREAS EXCAVATION SKETCH

BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



FIGURE  
3

L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\04\_Temporary Parking Sketch.dwg



LEGEND	
	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	CRUSHED AGGREGATE
	CRANE PAD AREA OVER CRUSHED AGGREGATE
	CRUSHED AGGREGATE (SAND BASE)



**TEMPORARY PARKING SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



FIGURE  
**4**

DRAFTED BY: CKL

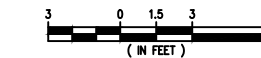
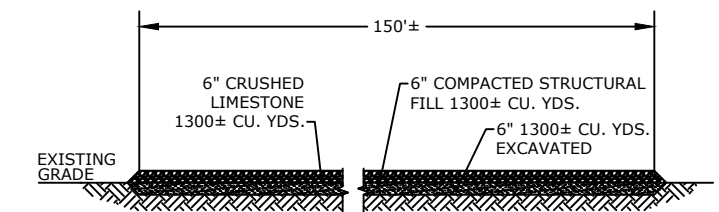
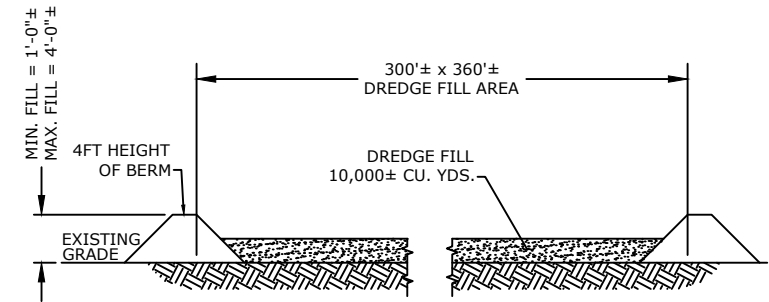
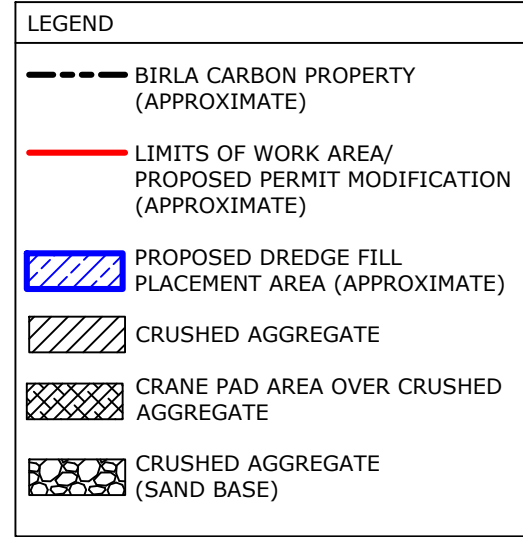
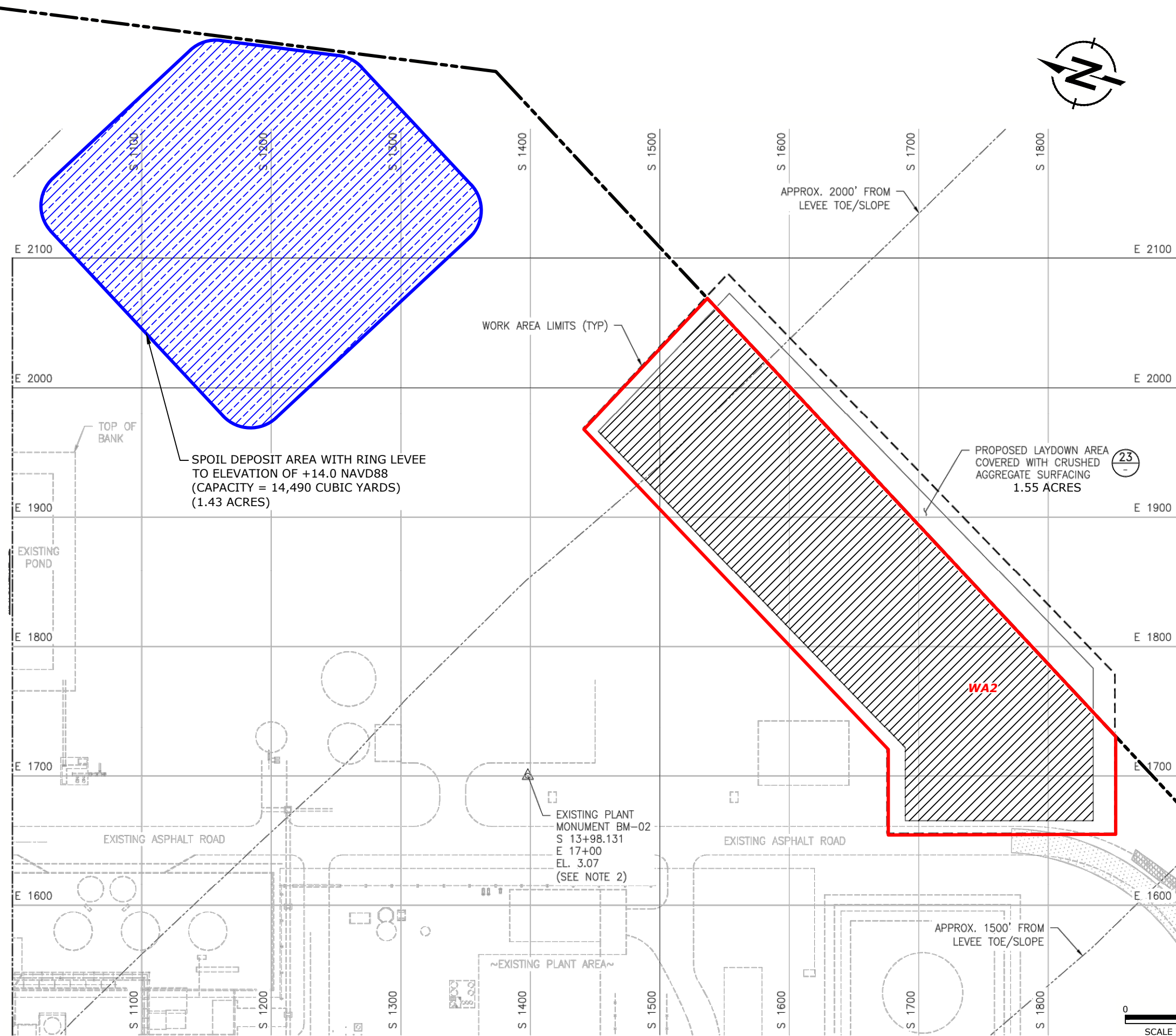
DATE: 6/26/20

1690013666





L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-12\06\_Temporary Laydown Sketch.dwg



**TEMPORARY LAYDOWN SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



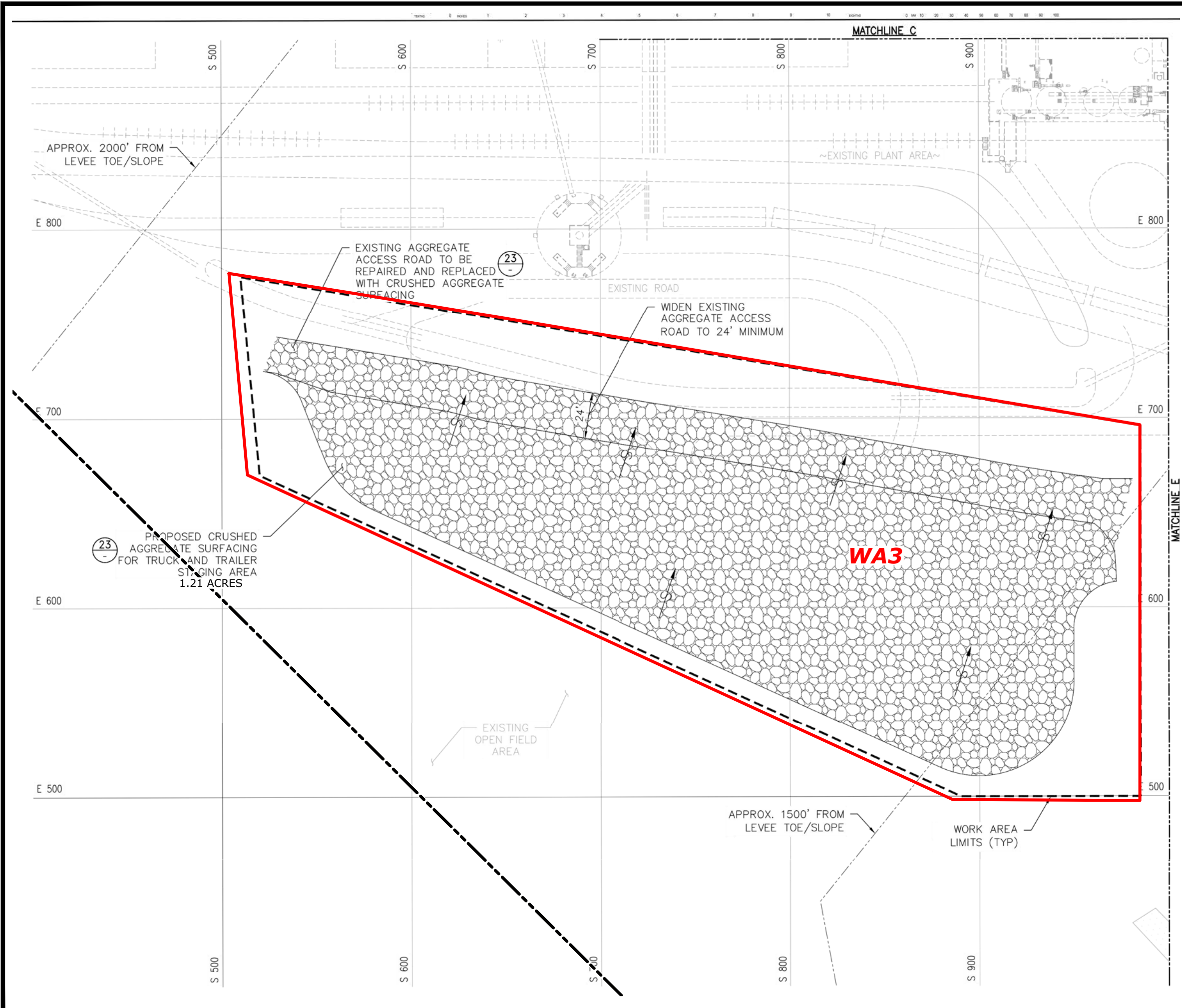
FIGURE  
**6**

DRAFTED BY: CKL

DATE: 12/16/2020

1690005987

L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\07\_Truck and Trailer Staging Area Sketch.dwg



**LEGEND**

- BIRLA CARBON PROPERTY (APPROXIMATE)
- LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
- PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
- CRUSHED AGGREGATE
- CRANE PAD AREA OVER CRUSHED AGGREGATE
- CRUSHED AGGREGATE (SAND BASE)
- EXCAVATION LIMITS



**TRUCK AND TRAILER STAGING AREA SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN

**RAMBOLL**

**FIGURE 7**

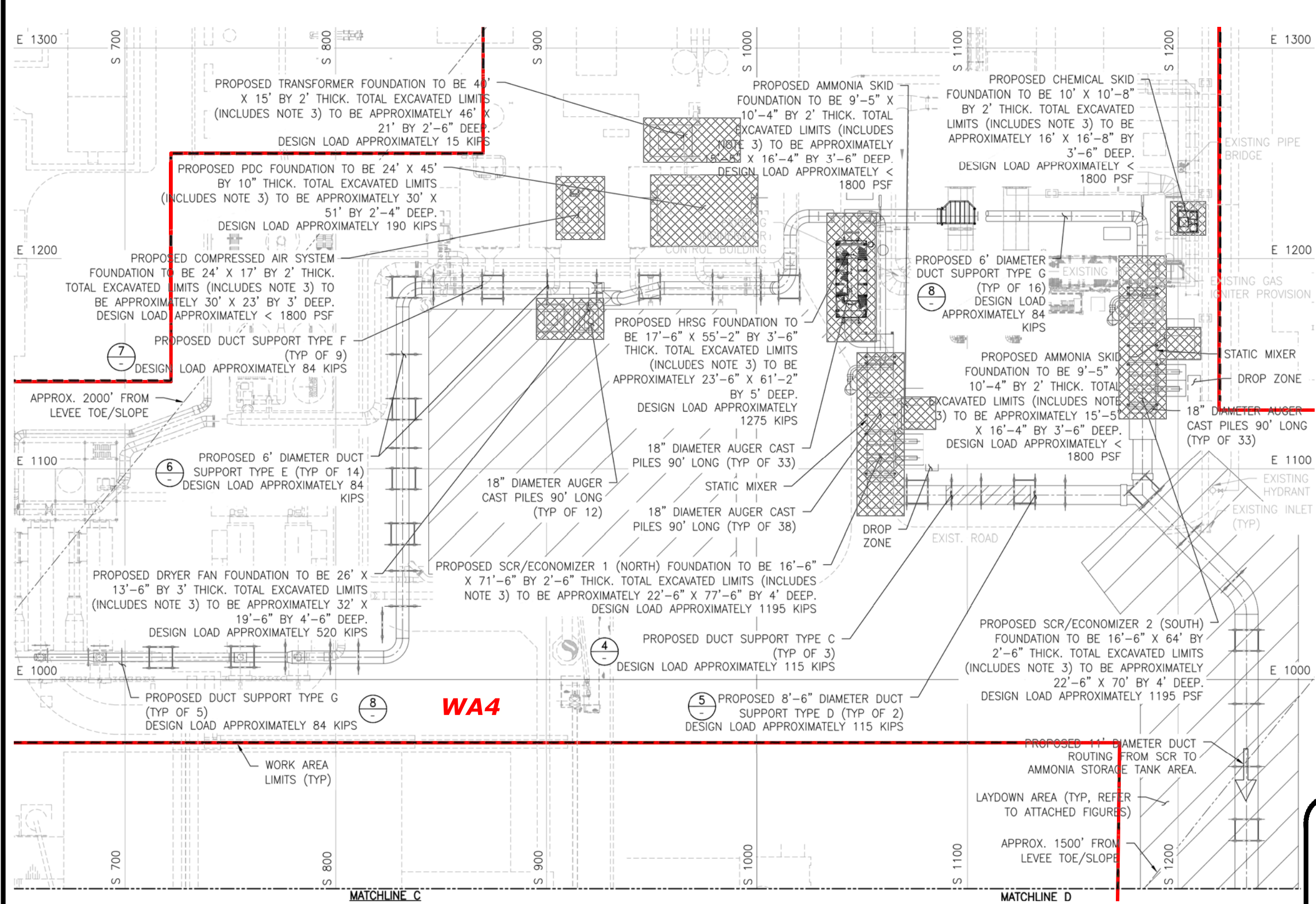
DRAFTED BY: CKL

DATE: 6/26/2020

1690013666



L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\08\_HRSG Area Plan Excavation Sketch.dwg



LEGEND	
	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	CRUSHED AGGREGATE
	CRANE PAD AREA OVER CRUSHED AGGREGATE
	CRUSHED AGGREGATE (SAND BASE)
	EXCAVATION LIMITS



HRSG AREA PLAN  
EXCAVATION SKETCH

BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN

FIGURE  
8

DRAFTED BY: CKL

DATE: 6/26/2020

1690013666

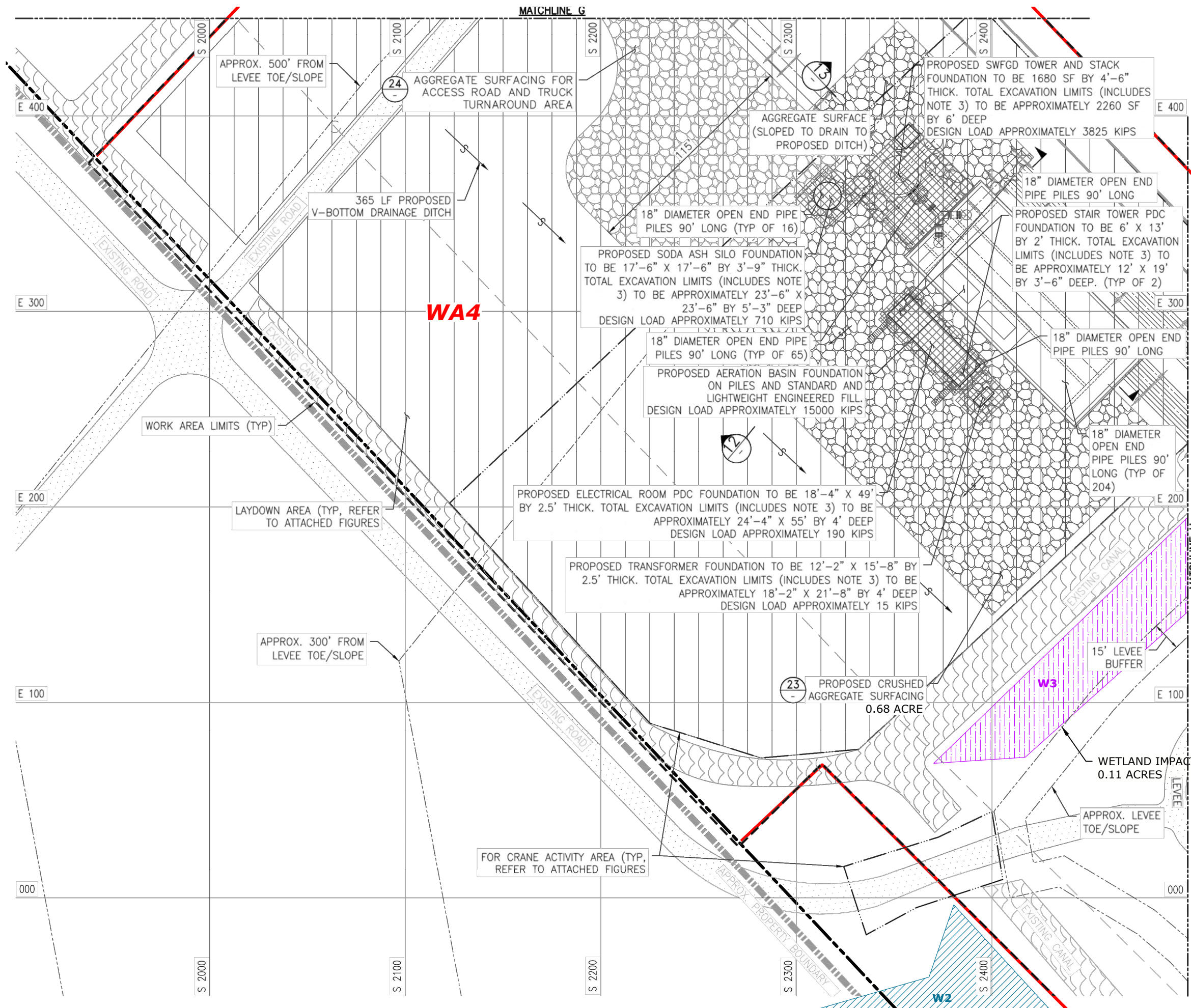








L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\11\_Aeration Basin Excavation Sketch.dwg



LEGEND	
	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	CRUSHED AGGREGATE
	CRANE PAD AREA OVER CRUSHED AGGREGATE
	CRUSHED AGGREGATE (SAND BASE)
	WETLAND TO REMAIN
	WETLAND TO BE IMPACTED (0.33 ACRES)
	EXCAVATION LIMITS

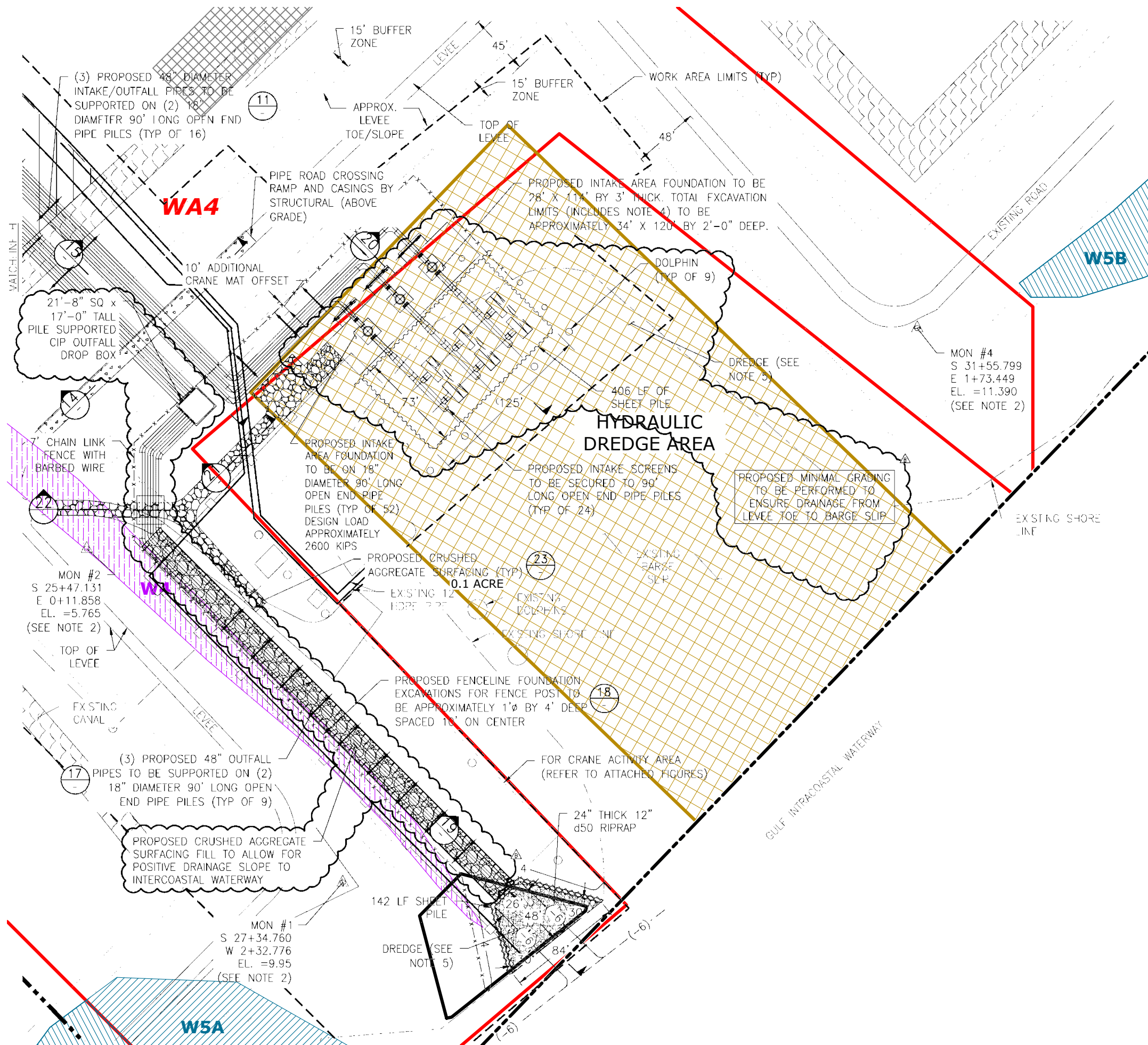


**AERATION BASIN  
EXCAVATION SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN













FIGURE  
**11**





# LEGEND

	BIRLA CARBON PROPERTY (APPROXIMATE)
	LIMITS OF WORK AREA/ PROPOSED PERMIT MODIFICATION (APPROXIMATE)
	PROPOSED DREDGE FILL PLACEMENT AREA (APPROXIMATE)
	PROPOSED HYDRAULIC DREDGE AREA (APPROXIMATE)
	CRUSHED AGGREGATE
	CRANE PAD AREA OVER CRUSHED AGGREGATE
	CRUSHED AGGREGATE (SAND BASE)
	WETLAND TO REMAIN
	WETLAND TO BE IMPACTED (0.33 ACRES)
	EXCAVATION LIMITS



**AERATION BASIN  
EXCAVATION SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



FIGURE  
**12**

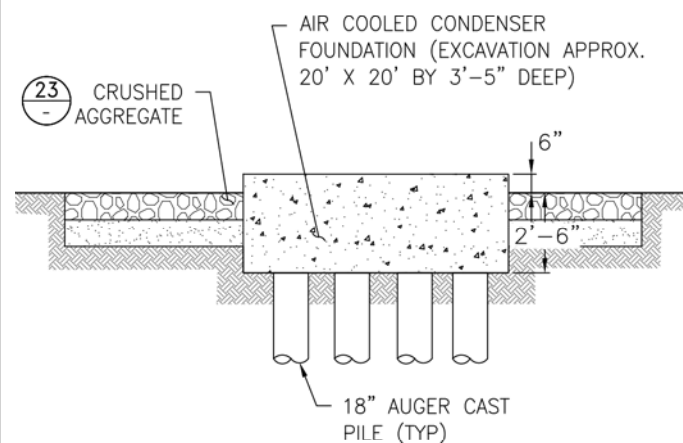
DRAFTED BY: CKL

DATE: 7/10/2020

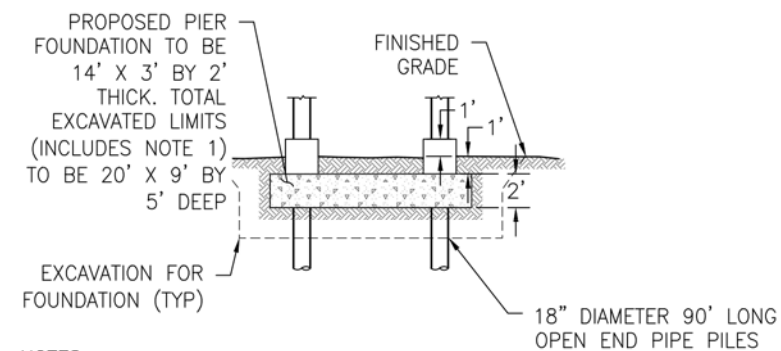
1690013666



L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\13-15 Details Sketch.dwg

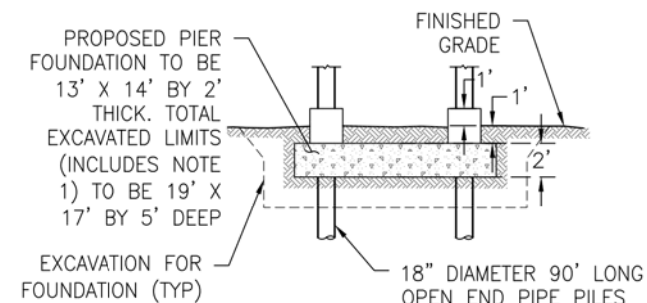


1 AIR COOLED CONDENSER FOUNDATION SECTION VIEW  
NTS



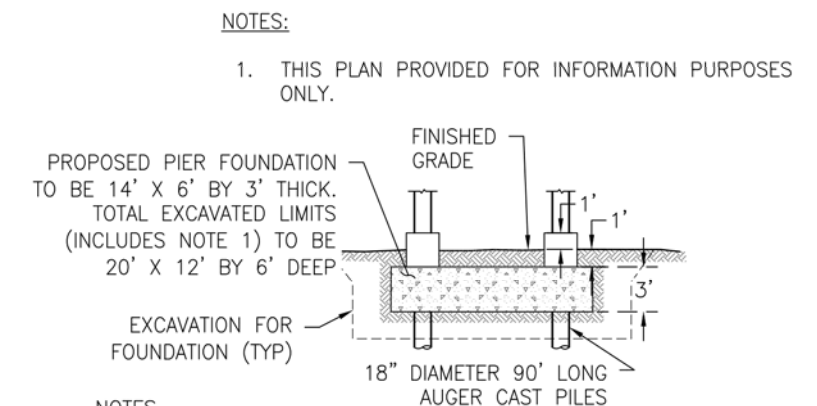
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

2 TYPE A DUCT SUPPORT  
NTS



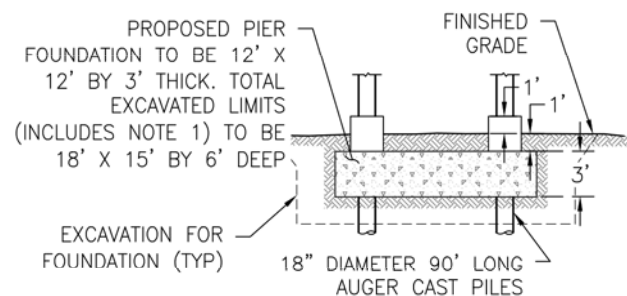
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

3 TYPE B DUCT SUPPORT  
NTS



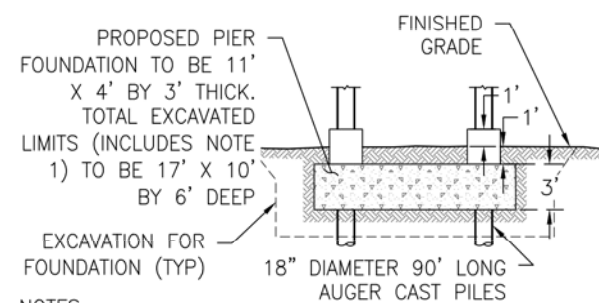
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

4 TYPE C DUCT SUPPORT  
NTS



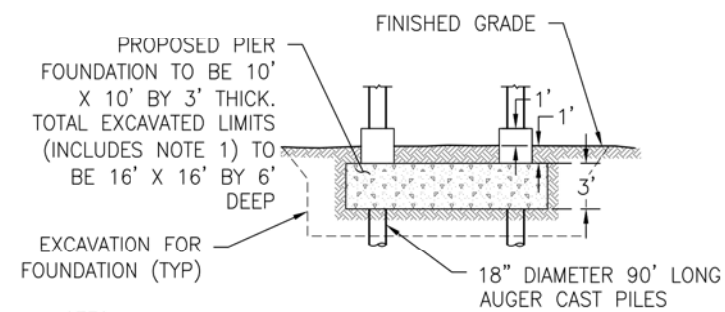
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

5 TYPE D DUCT SUPPORT  
NTS



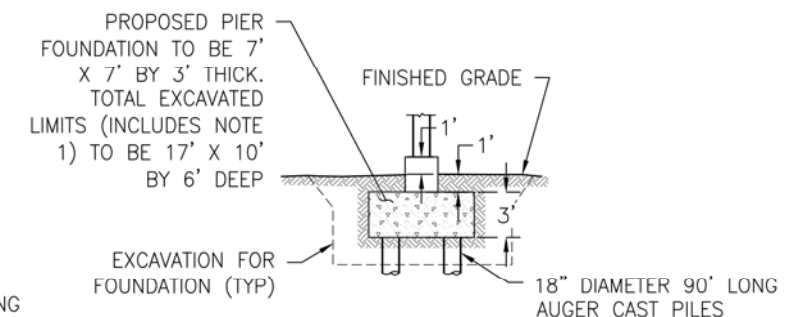
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

6 TYPE E DUCT SUPPORT  
NTS



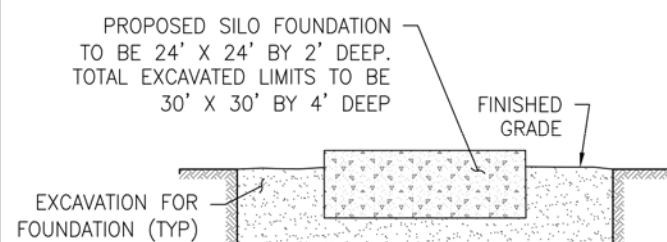
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

7 TYPE F DUCT SUPPORT  
NTS



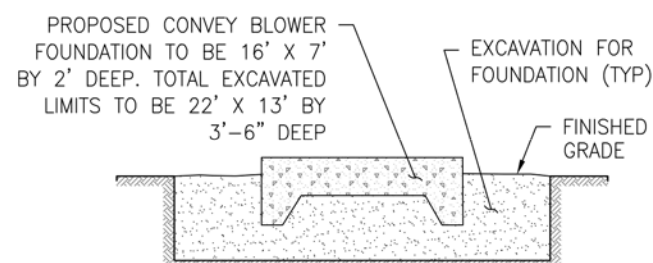
- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

8 TYPE G DUCT SUPPORT  
NTS



- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

9 DSI SILO FOUNDATION  
NTS



- NOTES
1. ALL SOIL SUPPORTED FOUNDATIONS SHALL HAVE A MINIMUM OF 2'-0" OF COMPACTED STRUCTURAL FILL UNDERNEATH THE FOUNDATION. THIS FILL SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE PERIMETER OF THE FOUNDATION.

10 DSI CONVEY BLOWER FOUNDATION  
NTS

**FOUNDATION DETAILS SKETCH**  
BIRLA CARBON - NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN

RAMBOLL

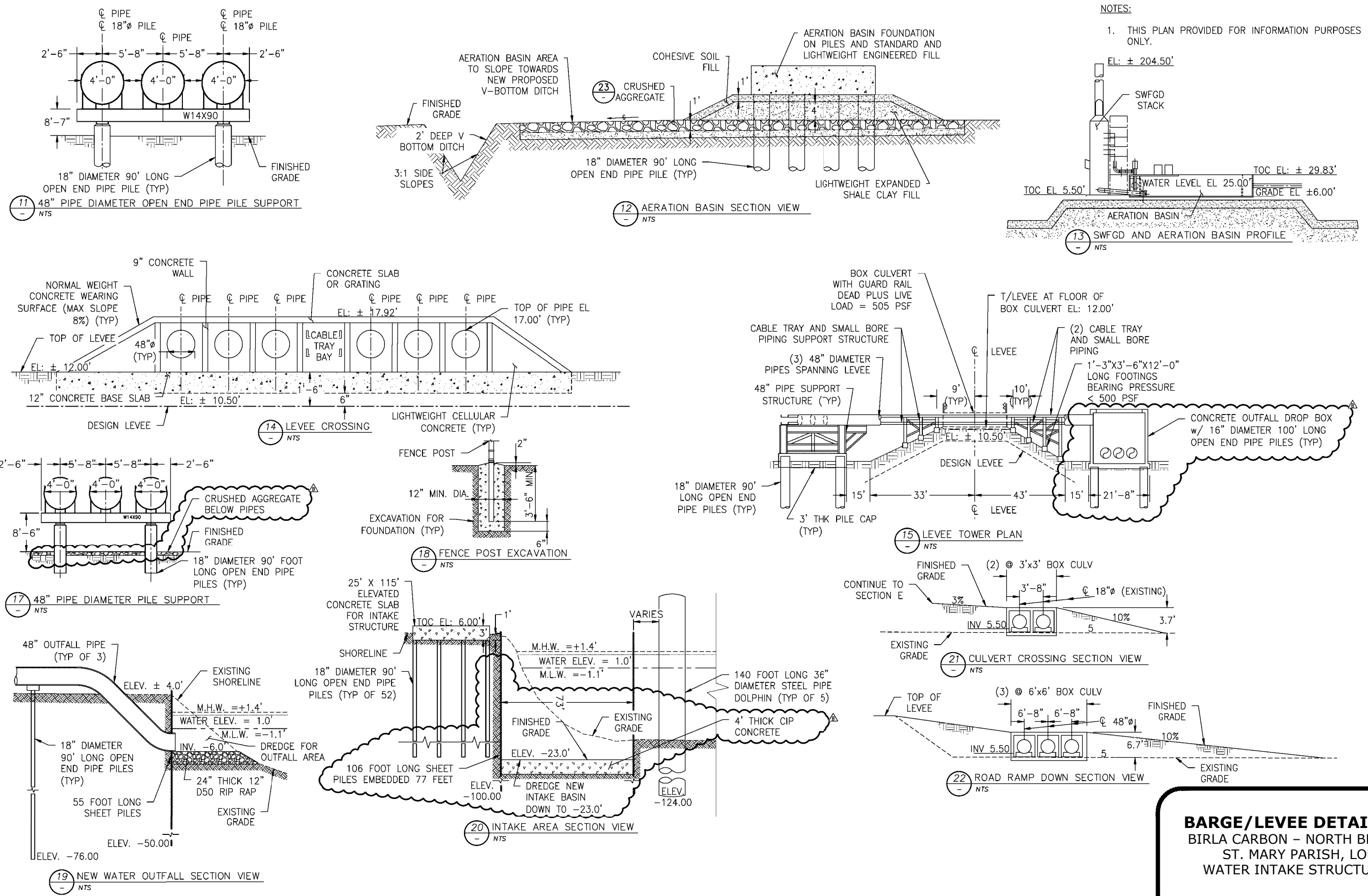
FIGURE  
13

DRAFTED BY: CKL

DATE: 6/29/2020

1690013666

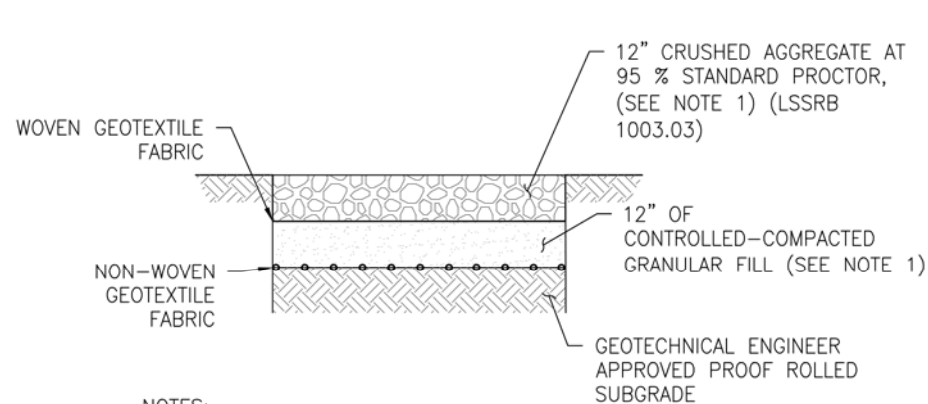
L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\13-15\_Details Sketch.dwg



**BARGE/LEVEE DETAILS SKETCH**  
BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN



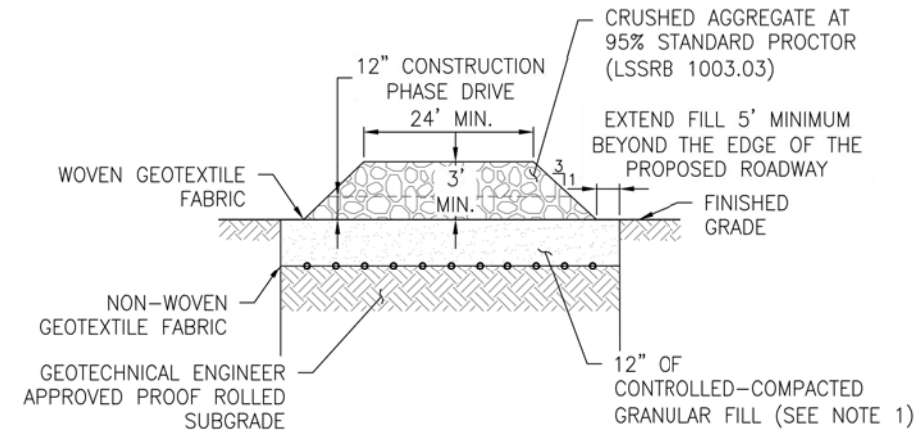




NOTES:

1. SECTION THICKNESS AS REQUIRED BY THE GEOTECHNICAL ENGINEERS FINAL GEOTECHNICAL REPORT AND RECOMMENDATIONS, TO BE CONFIRMED DURING DETAIL DESIGN.
2. EXTEND PAVEMENT SUBGRADE A MINIMUM OF 12 INCHES FROM EDGE OF PROPOSED PAVEMENT ALONG TANGENTS AND 36 INCHES ALONG CURVES.

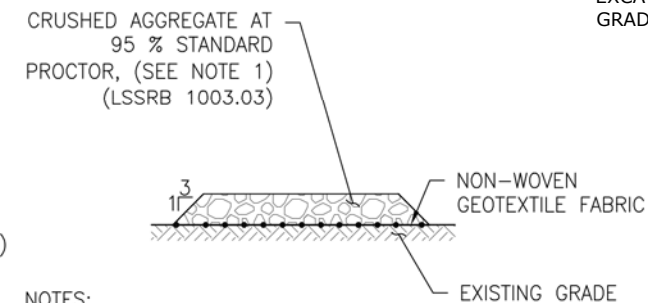
**23 CRUSHED AGGREGATE CROSS SECTION**  
- NTS



NOTES:

1. SECTION THICKNESS AS REQUIRED BY THE GEOTECHNICAL ENGINEERS FINAL GEOTECHNICAL REPORT AND RECOMMENDATIONS, TO BE CONFIRMED DURING DETAIL DESIGN.
2. EXTEND PAVEMENT SUBGRADE A MINIMUM OF 12 INCHES FROM EDGE OF PROPOSED PAVEMENT ALONG TANGENTS AND 36 INCHES ALONG CURVES.

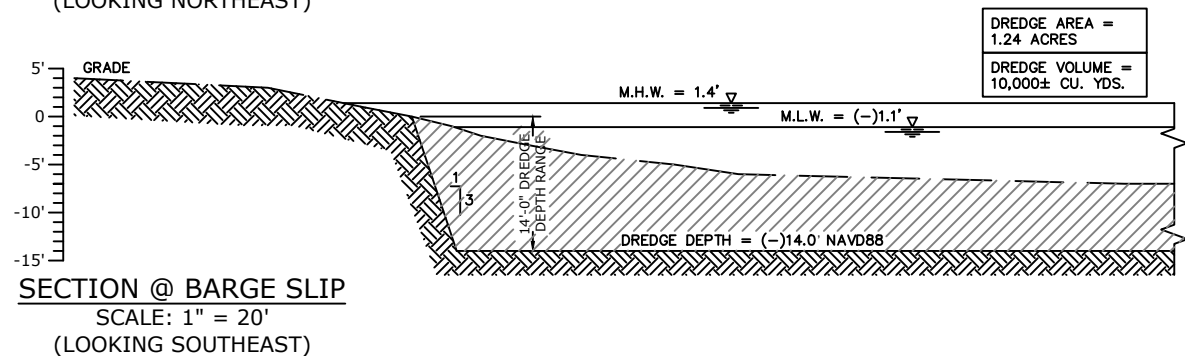
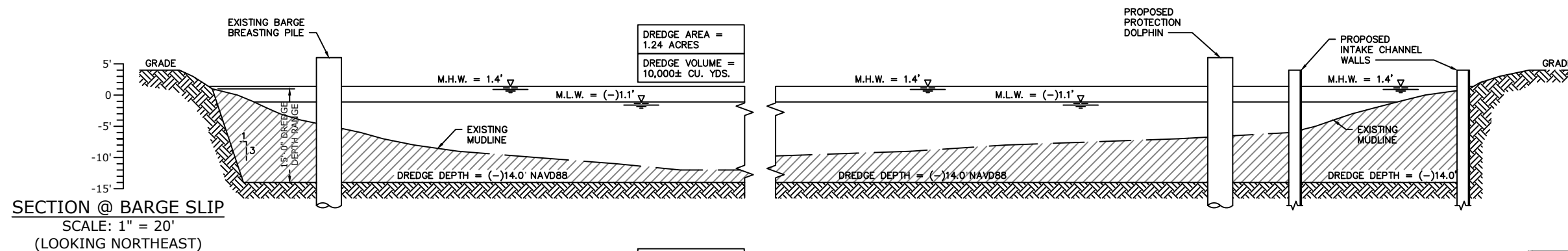
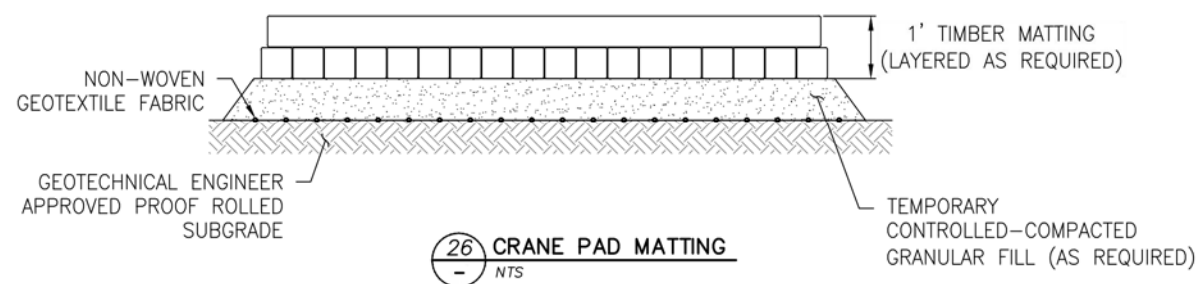
**24 ROAD CROSS SECTION**  
- NTS



NOTES:

1. SECTION THICKNESS AS REQUIRED BY THE GEOTECHNICAL ENGINEERS FINAL GEOTECHNICAL REPORT AND RECOMMENDATIONS, TO BE CONFIRMED DURING DETAIL DESIGN.

**25 TEMP OFFICE/PARKING AGGREGATE SURFACING**  
- NTS



## SECTIONS AT BARGE SLIP AND SURFACING DETAILS SKETCH

BIRLA CARBON – NORTH BEND FACILITY  
ST. MARY PARISH, LOUISIANA  
WATER INTAKE STRUCTURE DESIGN

**RAMBOLL**

FIGURE  
**15**

DRAFTED BY: CKL

DATE: 6/29/2020

1690013666



L:\Loop Project Files\CAD\1690013666\_Birla Carbon North Bend\2020-06\16\_Pre-Post Stormwater Flow Pattern (Outside of Plant Limits).dwg



SOURCE: AERIAL IMAGERY: GOOGLE EARTH™, IMAGE DATED 1/24/2018.



#### LEGEND

- BIRLA CARBON PROPERTY (APPROXIMATE)
- ~ PREDEVELOPMENT STORMWATER FLOW
- POST DEVELOPMENT STORMWATER FLOW

#### Notes:

1. As-built drawings and/or plats shall have written on them the date of completion of said activities and shall be submitted to the Louisiana Department of Natural Resources, Office of Coastal Management, P. O. Box 44487, Baton Rouge, LA 70804-4487 within 30 days following project completion.
2. All structures built under the authorization and conditions of this permit shall be removed from the site within 120 days of abandonment of the facilities for the herein permitted use, or when these structures fall into a state of disrepair such that they can no longer function as intended. This condition does not preclude the necessity for revising the current permit or obtaining a separate Coastal Use Permit, should one be required, for such removal activities.
3. Structures must also be marked/lighted in accordance with U. S. Coast Guard regulations.
4. In order to ensure the safety of all parties, the permittee shall contact the Louisiana One Call System (1-800-272-3020) a minimum of 48 hours prior to the commencement of any excavation (digging, dredging, jetting, etc.) or demolition activity.

0 200  
SCALE IN FEET

### PRE/POST STORMWATER FLOW PATTERN (OUTSIDE OF PLANT LIMITS) BIRLA CARBON – NORTH BEND FACILITY ST. MARY PARISH, LOUISIANA WATER INTAKE STRUCTURE DESIGN

RAMBOLL

FIGURE  
16

DRAFTED BY: CKL

DATE: 6/26/2020

1690013666





**DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
7400 LEAKE AVE  
NEW ORLEANS LA 70118-3651**

December 12, 2018

Operations Division  
Surveillance and Enforcement Section

Mr. Adam Goodine  
Ramboll  
1055 St. Charles Ave, Ste 501  
New Orleans, Louisiana 70130

Dear Mr. Goodine:

Reference is made to your request, on behalf of Columbian Chemicals Company, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 33, Township 15 South, Range 10 East, St. Mary Parish, Louisiana (enclosed map). Specifically, this property is identified as approximately 190 acres on and north of the Intracoastal Waterway.

Based on review of recent maps, aerial photography, soils data, and the information provided with your request, we have determined that part of the property contains wetlands and non-wetland waters that may be subject to U.S. Army Corps of Engineers' (Corps) jurisdiction. The approximate limits of the wetlands and non-wetland waters are designated in red and blue, respectively, on the map. A DA permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into waters of the U.S., including wetlands. Additionally, a portion of the wetlands and non-wetland waters may be subject to Section 10 of the Rivers and Harbors Act (RHA). A DA permit will be required prior to any work in waters subject to Section 10 of the RHA.

Please be advised that a permit from a local assuring agency, usually a Levee Board or Parish Council, must be obtained for any work within 1500 feet of a federal flood control structure such as a levee. You must apply by letter to the appropriate agency including full-size construction plans, cross sections, and details of the proposed work. Concurrently with your application to the assuring agency, you must also forward a copy of your letter and plans to Ms. Amy Powell, Operations Manager for Completed Works of the Corps, the Coastal Protection and Restoration Authority, and/or the Louisiana Department of Transportation and Development for their review and comments concerning the proposed work. The assuring agency will not issue a permit for the work to proceed until they have obtained letters of no objection from these reviewing agencies. For additional information, please contact Ms. Powell at (504) 862-2241.

Please be advised that this property is in the Louisiana Coastal Zone and a Coastal Use Permit may be required prior to initiation of any activities on this site. For additional information, contact Ms. Christine Charrier, Office of Coastal Management, Louisiana Department of Natural Resources at (225) 342-7953.

This jurisdictional determination has been conducted to identify the limits of the Corps' Clean Water Act jurisdiction for the particular site identified in your request. This jurisdictional determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If the property owner or tenant is a USDA farm participant, or anticipates participation in USDA programs, contact the local office of the Natural Resources Conservation Service prior to starting work.

You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date. Additionally, this determination is valid for the identified client only and is not to be used for decision-making by any other individual or entity.

Should there be any questions concerning these matters, please contact Dr. Rosie Schwamenfeld at (337) 291-3045 and reference our Account No. MVN-2018-01055-SR. If you have specific questions regarding the permit process or permit applications, please contact our Western Evaluation Section at (504) 862-2261.

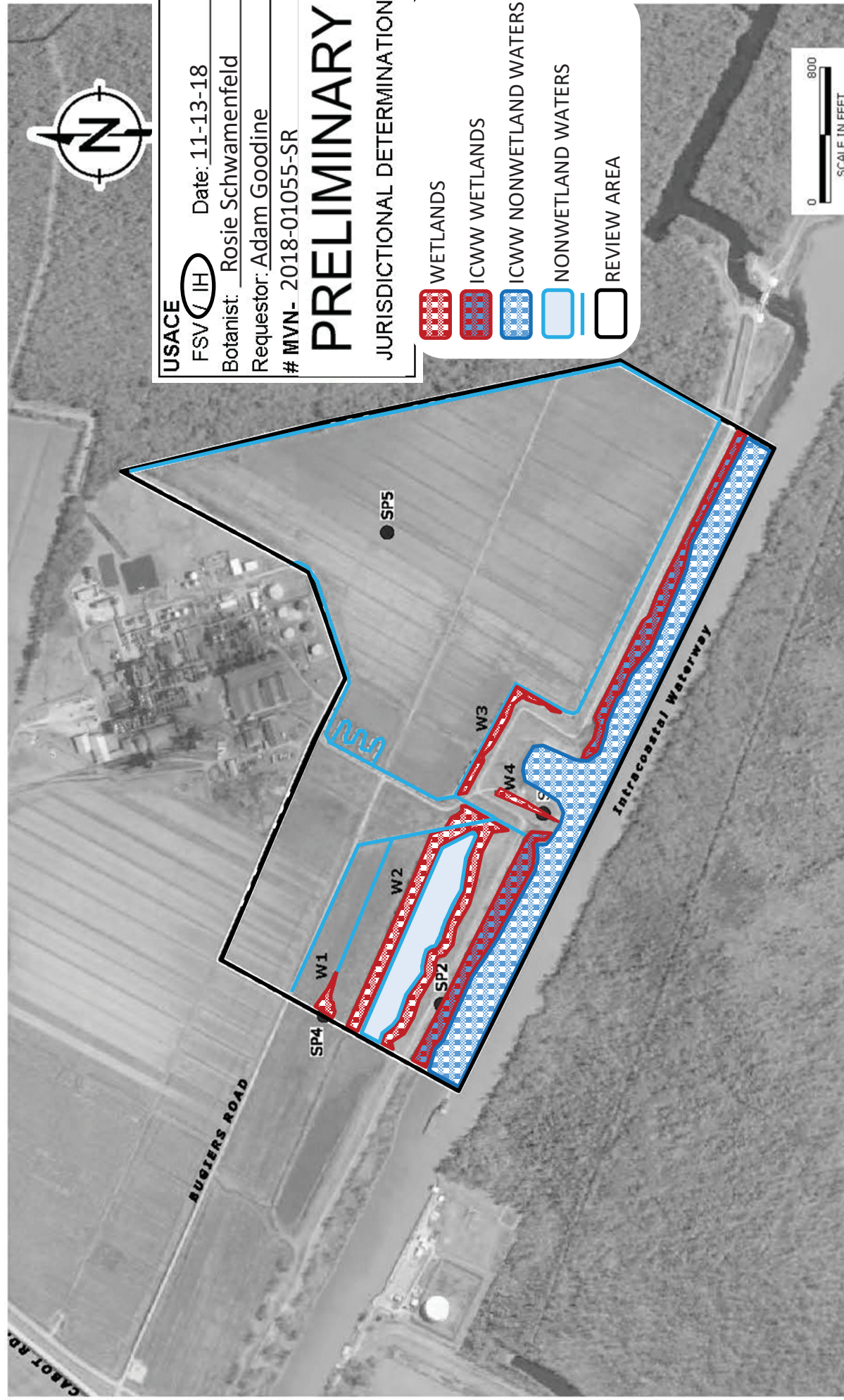
Sincerely,

GUARISCO.BRAD.AN  
THONY.1376421941

for Martin S. Mayer  
Chief, Regulatory Branch

Digitally signed by  
GUARISCO.BRAD.ANTHONY.1376421941  
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,  
ou=USA,  
cn=GUARISCO.BRAD.ANTHONY.1376421941  
Date: 2018.12.12 13:49:18 -06'00'

Enclosures



**WETLAND DELINEATION MAP**  
 COLUMBIAN CHEMICALS COMPANY  
 ST. MARY PARISH, LOUISIANA

FIGURE

**5A**

DRAFTED BY: ELS

DATE: 6/8/18

1690005987

**PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:** December 12, 2018

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:**

Adam Goodine, Ramboll  
1055 St. Charles Ave, Ste 501,  
New Orleans, LA 70130

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** MVN-2018-01055-SR

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

**(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR  
AQUATIC RESOURCES AT DIFFERENT SITES)**

State: Louisiana County/parish/borough: **St. Mary** City:

Center coordinates of site (lat/long in degree decimal format):

Lat.: 29.6779 ° Long.: -91.4546 °

Universal Transverse Mercator:

Name of nearest waterbody: unnamed tributaries and the Intracoastal Waterway

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: 11-8-18; 11-13-18

☐ Field Determination. Date(s):

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY  
JURISDICTION.**

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
			5.72 acres	wetland	404
			5.67 acres	ICWW wetland	10/404
			4320 feet	ICWW nonwetland waters	10/404
			12.1 acres	nonwetland waters	404



**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- ☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:  
Map: \_\_\_\_\_.
- ☒ Data sheets prepared/submitted by or on behalf of the PJD requestor.  
☐ Office concurs with data sheets/delineation report.  
☐ Office does not concur with data sheets/delineation report. Rationale: \_\_\_\_\_.
- ☐ Data sheets prepared by the Corps: \_\_\_\_\_.
- ☐ Corps navigable waters' study: \_\_\_\_\_.
- ☒ U.S. Geological Survey Hydrologic Atlas: \_\_\_\_\_.  
☐ USGS NHD data.  
☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: 1:24000 North Bend \_\_\_\_\_.
- ☒ Natural Resources Conservation Service Soil Survey. Citation: NRCS wss \_\_\_\_\_.
- ☒ National wetlands inventory map(s). Cite name: USFWS nwi \_\_\_\_\_.
- ☐ State/local wetland inventory map(s): \_\_\_\_\_.
- ☒ FEMA/FIRM maps: 1% annual flood hazard zone \_\_\_\_\_.
- ☐ 100-year Floodplain Elevation is: \_\_\_\_\_. (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): CIR: 16,13,12,10,08,04,98 \_\_\_\_\_.  
or ☒ Other (Name & Date): Google Earth Pro \_\_\_\_\_.
- ☒ Previous determination(s). File no. and date of response letter: 2013-00592-SR (6-11-13) \_\_\_\_\_.
- ☒ Other information (please specify): lidar \_\_\_\_\_.

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

SCHWAMENFELD.ROS  
E.ELLEN  
PALUMBO.1388591702

Digitally signed by SCHWAMENFELD.ROSE ELLEN  
PALUMBO.1388591702  
DN: cn=US, o=U.S. Government, ou=DAD, ou=PKI,  
ou=USA, cn=SCHWAMENFELD.ROSE ELLEN  
PALUMBO.1388591702  
Date: 2018.11.13 15:16:15 -0600

Signature and date of  
Regulatory staff member  
completing PJD

requested by mail

Signature and date of  
person requesting PJD  
(REQUIRED, unless obtaining  
the signature is impracticable)<sup>1</sup>

<sup>1</sup> Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Columbian Chemicals Company	File Number: MVN-2018-01055-SR	Date: December 12, 2018
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact:

Brad Guarisco  
Chief, Surveillance & Enforcement Section  
U.S. Army Corps of Engineers  
7400 Leake Avenue  
New Orleans, LA 70118  
504-862-2274

If you only have questions regarding the appeal process you may also contact:

Kyle Gordon  
Administrative Appeals Review Officer  
Mississippi Valley Division  
P.O. Box 80 (1400 Walnut Street)  
Vicksburg, MS 39181-0080  
601-634-5820 FAX: 601-634-5816

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

\_\_\_\_\_  
Signature of appellant or agent.

Date:

Telephone number:

Mr. Jay Pecot  
Louisiana Department of Natural Resources  
Office of Coastal Management  
617 North 3rd Street  
Baton Rouge, LA 70802-5428

**BIRLA CARBON  
REQUEST FOR PERMIT MODIFICATION  
COASTAL USE PERMIT P20190030**

Date September 6, 2019

Dear Mr. Pecot,

Ramboll US Corporation (Ramboll), agent for Birla Carbon, recently secured Coastal Use Permit (CUP) P20190030 for the construction of a flue gas desulfurization (FGD) system to reduce air emission levels of NO<sub>x</sub>, SO<sub>2</sub>, and particulate matter, per an U.S. Environmental Protection Agency consent decree. As discussed previously, there have been some minor design changes to the project layout and approach, along with the addition of scope items not originally included within the original permit action. Thus, Ramboll (on behalf of Birla Carbon) is requesting a permit modification to P20190030 in order to accurately reflect these minor changes within the permit record. Note that the extent of impact to coastal resources has not been increased as a result of these proposed changes, which are outlined below.

Ramboll  
1055 St. Charles Avenue  
Suite 501  
New Orleans, LA 70130  
USA

T +1 504 648 2123  
F +1 504 299 3494  
[www.ramboll.com](http://www.ramboll.com)

**Layout / Design Changes**

A complete set of project design drawings have been attached to this modification request and are depicting the proposed development on nine sheets. The most significant change to the project layout within this modification is the levee crossing strategy. Previously, the levee was proposed to be crossed using a span overtop the levee utilizing footing supports to hold the water supply pipelines feeding the FGD system. However, geotechnical stability analysis has shown that the use of footings to support such a structure within the levee vicinity has the potential to negatively affect the levee's integrity. Thus, the crossing has been redesigned to sit atop the levee itself and distribute the weight of the water piping system across the structure and safely attain the project goal of using Intracoastal Waterway waters to feed the FGD and meet the requirements of the consent decree. Minor changes to the design on the landward side include the establishment of several laydown areas, work areas, and internal plant

improvements to facilitate the operation of the FGD. All of these improvements are within upland areas and will not impact coastal resources and are simply included for completion of the record.

### **Dredging Plan**

Birla Carbon currently holds CUP P20141334, which allows for maintenance dredging of the existing barge slip by hydraulic line, with placement of dredged material within the plant site at an existing maintained upland area. This permit is dated to expire December 17, 2019. As depicted within the attached drawings, Birla Carbon is requesting that this maintenance dredging of the slip for waterborne traffic as well as maintenance of the FGD system operation be included within the modification of P20190030 to allow for maintenance of this slip. The dredging plan is not proposed to be changed from the 2014 permit; the dredge elevation within the slip is proposed to be maintained at -14.0 ft NGVD as shown within the 2014 permit and as shown within the permit drawings attached to this application. The dredge disposal area will be the same location as previously utilized, and as depicted within the application form. It is anticipated that approximately 10,000 cubic yards of dredge material will be required to be removed from the slip and the outfall pit over the next five years.

### **FGD System Maintenance**

Project revisions include an updated plan as well as the addition of dredging to the project scope; another scope item required to be added to the overall project plan is the anticipated need for maintenance activity in order to keep the FGD system operational. The system utilizes a series of sub-marine pumps to move water from the waterway through a screening mechanism and into the system to be used for scrubbing purposes prior to discharge. Due to the quality of the source water, it is anticipated that routine system maintenance will be required to ensure the screens and other components remain in peak operational condition. Maintenance activities are anticipated to include:

- Intake channel structures (sheet piling and dolphins) are not likely to require maintenance; however if impacted by barges or tug boats Birla Carbon and their contractors would repair/replace in kind.
- Outfall maintenance will be minimal and limited to possible repair/replacement of the rip-rap in kind following adverse weather conditions or barge/tug boat impact.
- Intake screen air burst cleaning frequency is dependent upon the amount of debris in the GIWW, which varies by season, weather conditions, barge traffic, etc.
- Periodic manual cleaning of the screens may be required. This would typically be accomplished in the water by divers.
- Removal of screens from the water is not expected to be required, but if needed, the screens would be unbolted by divers and lifted by crane for cleaning, repair, or replacement. This is not anticipated to occur often (likely once in 25 year occurrence).

### **Summary**

This information is being provided to assist in the LDNR review of the planned activity for which Birla Carbon is seeking LDNR CUP Modification. Note that our analysis of the overall acreage of disturbance has been refined within these drawings from our previous application. However, the overall intent of the project and degree of impact remains the same; thus the previously provided Needs, Alternatives, and

Justification Analysis (including the Hydrologic Modification Impact Analysis) provided with the initial application is still accurate and appropriate.

We greatly appreciate your attention to our project and are confident this information is sufficient for LDNR to issue a modified version of the CUP. Please feel free to call me anytime to discuss the issuance of this Coastal Use Permit further.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Goodine", with a long horizontal flourish extending to the right.

**Adam M. Goodine**

Managing Consultant  
Ramboll Environment and Health - New Orleans  
D +1 (504) 6482123  
M +1 (585) 4240322  
[agoodine@ramboll.com](mailto:agoodine@ramboll.com)

ENCLOSURES: *Joint Permit Application Form*  
*Figures 1-9*

Intended for

**Louisiana Department of Natural Resources – Coastal Management Division  
United States Army Corps of Engineers – New Orleans District  
Joint Permit Application**

Document type

**Needs, Alternatives, and Justification Analysis**

Date

**February 2020 (revised from January 2019)**

# **BIRLA CARBON**

## **NORTH BEND PLANT**

## **CENTERVILLE, LOUISIANA**





**BIRLA CARBON**  
**NORTH BEND PLANT CENTERVILLE, LOUISIANA**

Ramboll  
1615 Poydras Street  
Suite 930  
New Orleans, LA 70112  
USA  
T +1 504 648 2120  
F +1 504 299 3494  
[www.ramboll.com](http://www.ramboll.com)

## CONTENTS

<b>1.</b>	<b>PROJECT INTRODUCTION AND NEED</b>	<b>1</b>
<b>2.</b>	<b>SITE LOCATION AND HISTORY</b>	<b>3</b>
<b>3.</b>	<b>PROPOSED PROJECT DESCRIPTION</b>	<b>4</b>
<b>4.</b>	<b>CONSTRUCTION ALTERNATIVES</b>	<b>6</b>
4.1	Construction Alternative 1 – No Action	6
4.2	Construction Alternative 2 – Traditional Flue Gas Desulfurization	6
4.3	Construction Alternative 3 – Seawater Flue Gas Desulfurization	7
<b>5.</b>	<b>ALTERNATIVE SITES - WATER SUPPLY EVALUATION</b>	<b>8</b>
5.1	Alternative Site/Water Supply 1: Bayou Blue	8
5.2	Alternative Site/Water Supply 2: Groundwater Withdrawal	9
5.3	Alternative Site/Water Supply 3: Gulf Intracoastal Waterway - Main Channel	10
5.4	Alternative Site/Water Supply 4: Gulf Intracoastal Waterway – Barge Slip	10
5.5	Summary	11
<b>6.</b>	<b>PROJECT JUSTIFICATION</b>	<b>12</b>
<b>7.</b>	<b>ENVIRONMENTAL IMPACTS AND MITIGATING MEASURES</b>	<b>14</b>
7.1	Air Quality	14
7.2	Waste	14
7.3	Water	15
7.4	Land	15
7.5	Wetlands	15
7.6	Threatened and Endangered Species	16
7.7	Cultural and Historic Resources	17
7.8	Emergency Preparedness and Response and Infrastructure	18
7.9	Floodplain	18
7.10	Infrastructure	18
<b>8.</b>	<b>HYDROLOGIC MODIFICATION IMPACT ANALYSIS</b>	<b>19</b>
8.1	Storm Water Runoff	19
8.2	Dredge Spoil Dewatering	21
<b>9.</b>	<b>SUMMARY AND CONCLUSIONS</b>	<b>22</b>

## 1. PROJECT INTRODUCTION AND NEED

Columbia Chemical Company's North Bend Facility, located in Centerville Louisiana, recently became part of the Aditya Birla Carbon Group. Birla Carbon is part of the Aditya Birla Group and is one of the world's largest manufacturers and suppliers of carbon black. Overall Birla Carbon has the capability to produce two million metric tons of carbon black per year world-wide, including production from the North Bend Plant in Centerville. Carbon black has a variety of industrial and commercial uses in a wide variety of rubber, plastic, coatings, and ink.

Located in St. Mary Parish in Centerville, Louisiana, the North Bend Facility was constructed in 1953 and occupies approximately 96 acres of land with connections to LA Hwy 317 as a primary roadway to and from the facility, and the Louisiana Delta short line railway that services the facility. The North Bend facility was also built adjacent to the Gulf Intracoastal Waterway (GIWW), serving as the primary route for delivery of feedstock materials by barge. The facility's carbon black products are used in the production of rubber, manufactured rubber goods, plastics, pigments and many other products. The facility directly employs approximately 160 personnel.

The United States Environmental Protection Agency (US EPA) has recently investigated the carbon black industry as part of the Clean Air Act (CAA) enforcement initiative, primarily focused on New Source Review (NSR) compliance. In this regard, carbon black manufacturers such as Birla Carbon have been prompted to investigate air pollution control technologies that can meet emissions levels as they are outlined in consent decrees entered into between facility owners and the US EPA. Birla Carbon investigated various means of reducing certain air pollutants from its North Bend Facility to meet these consent decree requirements.

Birla Carbon and the US EPA entered into a consent agreement to reduce levels of emissions of oxides of nitrogen and sulfur dioxide (SO<sub>2</sub>). Based on findings provided to Ramboll from a 2015 engineering study, it was found the use of a seawater flue gas desulfurization (FGD) system would be a viable option to reduce SO<sub>2</sub> emissions at the facility. FGD is an industrial process that utilizes seawater to remove SO<sub>2</sub> from exhaust gasses, resulting in reduced sulfur emissions into the air, and the discharge of inert elements to the GIWW. After careful consideration as explained herein, Birla Carbon has decided to use the Gulf Intracoastal Waterway (GIWW) for the water source to support the proposed FGD.

After careful review, analysis, and project planning, Birla Carbon has selected the proposed Seawater FGD to meet the project needs with the least amount of detrimental environmental impact. Consistent with state and federal permitting requirements implementing the Clean Water Act (CWA) and Coastal Zone Management Act (CZA), this "Needs, Alternatives, and Justification Analysis" provides a review of the proposed project, and feasible and practical alternative locations and methods relevant to the

proposed project that are consistent with the project's purpose, objectives and needs. Feasible alternatives that are environmentally and economically viable, taking into consideration cost, landowners, as well as legitimate economic reasons for choosing to construct a project with a particular installation method, are considered with respect to the purpose and need for the project. The detailed information provided herein clearly demonstrates that the project, as proposed, is the best option to optimize the project needs and objectives while avoiding environmental impacts to the greatest practicable extent and where impacts are unavoidable, demonstrates that impacts will be minimized and mitigated in accordance with state and federal regulations. In addition, this document clearly demonstrates the significant economic and safety benefits to the local community and Louisiana that will result from the project.

## 2. SITE LOCATION AND HISTORY

The subject property is located in St. Mary Parish (Figure 1) and covers approximately 96-acres of land. The project area is limited to approximately 30.7 acres of land (of which 21.5 acres is to be converted to developed semi-impervious surface) situated south and west of the community of Centerville, LA off LA Hwy 317, to the east. The facility is approximately 106 miles west of New Orleans, LA, and approximately 85 miles south/southwest of Baton Rouge, LA.

The portion of property proposed for installation of this system is in the area of the facility barge slip, the federal levee system and associated GIWW, adjacent agricultural lands, and developed and undeveloped portions of the existing plant operations areas. The area is composed of wetlands, uplands, industrial lands, and working sugarcane agricultural land. Although there are no nearby residential areas, Cabot Company's Canal Plant is immediately downstream from the location on the GIWW. According to topographic mapping, until 1953 the land was undeveloped farmland, with initial development appearing at this time along with the associated railway.

### 3. PROPOSED PROJECT DESCRIPTION

Detailed plans and profile views of the proposed features have been developed and included within this Joint Permit Application and referenced in the following discussion (refer to Figures 1-16 included with the application). The proposed seawater FGD system will be positioned south of the existing facility. FGD pumps will be located within the barge slip area located on the GIWW. The FGD will have one intake structure consisting of three intake pumps; associated piping at the pump discharge is sized at 4ft diameter (48in). Each pump will have two inlet screens, operating two at a time. The screens are made up of wedge wire with airburst cleaning systems. These intakes will collect surface water from the GIWW, in accordance with specifications as required under Section 316(b) of the Clean Water Act. The designed intake will operate 365 days a year, 24 hours a day, with a maximum and minimum rate of 150,000 gallons per minute (gpm) to 50,000 gpm respectively. Generally, the proposed intent is to have two pumps operational at all times with a third on standby to account for breakdowns maintenance events, or to add additional scrubbing water as needed. Thus the anticipated operational rate will hover at or around 100,000 gpm at most times.

The intake of GIWW surface water is for the sole purpose of the FGD process (although there will be some inherent cooling effect on the flue gas). Surface water will be collected in a portion of the slip surrounded by sheet piling and pumped at normal total of 100,000 gpm (two intakes at 50,000 gpm as stated above) to a feed water basin across the levee structure. Water is moved into the FGD scrubber where it is treated with biocide and, if needed, bicarbonate to support the chemical processes for desulfurization. The chemical processes of Flue Gas Desulfurization are outlined below:

- $\text{SO}_2$  is dissolved into sea water
- Dissolved  $\text{SO}_2$  forms equilibrium with sulfurous acid and releases  $\text{H}^+$  cations which lowers pH
- Alkalinity in water neutralizes  $\text{H}^+$  cations which increases pH

Upon leaving the FGD scrubber, the alkalinity will be adjusted as needed. Water will then be moved to the Aeration/Oxidation Basin. In this basin, oxygen is delivered by Oxidation Air Blowers, which causes oxidation of sulfite. Natural bicarbonate from additional GIWW water added to the basin neutralizes  $\text{H}^+$  cations, and the oxidation process will strip  $\text{CO}_2$  out of the water, which will raise the pH. Effluent water will then gravity flow back over the levee and discharge into the GIWW. The scrubber water intake and discharge process will operate in accordance with the facility Louisiana Pollutant Discharge Elimination System Permit (LPDES) and 316(b) requirements, to be issued by Louisiana Department of Environmental Quality (LDEQ).

Minor impacts to wetlands are anticipated to result from the installation of this pumping system. A wetlands delineation of the property bounds consistent with the USACE 1987 Wetlands Delineation

Manual was performed in 2018. The wetlands delineation (Jurisdictional Determination number MVN-20187-01055-SR) has been issued by the USACE and is included within the Joint Permit Application. Additionally, a request for Section 408 permission to install the pipelines over the GIWW levee will be submitted and reviewed concurrently with this application. The installation of this system has been designed to avoid wetland impact to the greatest possible extent throughout the construction of the project.

## 4. CONSTRUCTION ALTERNATIVES

To meet the requirements of the consent decree with the US EPA and Department of Justice, multiple methods of construction were investigated for the North Bend facility. These alternatives include multiple air emissions reduction solutions, as well as a no action alternative.

### 4.1 Construction Alternative 1 – No Action

Ramboll investigated the alternative in which no action was completed to comply with the order to reduce air emissions. It was concluded that this would not be a viable option for the facility due to the implications of the Clean Air Act enforcement initiative. Additionally, the North Bend facility would not be adhering to the consent decree with US EPA, ultimately resulting in the cessation of operations at the facility and loss of employment for 160 employees as well as support services and their employees. Therefore, this alternative is not considered a viable option and is not evaluated further in this report.

### 4.2 Construction Alternative 2 – Traditional Flue Gas Desulfurization

The traditional wet-dry and semi-dry FGD system would require large quantities of lime or limestone. In evaluating the long-term sustainability of these types of systems, there was concern of the impacts of generating large quantities of solid waste. The solid waste would be a gypsum-like material generated by traditional FGD systems, which are beneficial in the use of wall board production, soil conditioner/fertilizer base, and a substitute for cement plant raw material. However, this solid waste generated would have no beneficial use in the South Louisiana market at this time. Additionally, due to the proximity of other carbon black companies in the vicinity (all of which are required to reduce emissions) there is concern for long term landfill space. This landfill space would be consumed very quickly due to the increase of solid waste generation, which could be a very negative impact to the surrounding communities in the near and long term.

Finally, the local environment has not been developed or designed to consider the implication of heavily trucked wastes transported on local highways in this vicinity. Access routes to the facility include residential and rural areas and are not currently heavily trafficked with industrial sized vehicles. The necessary amount of feedstock and waste for a traditional FGD system at this location would require several trucks to supply the facility daily, as well as collect and remove waste materials. This would result in heavy industrial traffic in an area locally not known for or designed for such conditions; residents would likely be adverse.

Based on the evaluation this alternative and shortcomings as described above, is not considered a viable option and is not further considered in this report.



### **4.3 Construction Alternative 3 – Seawater Flue Gas Desulfurization**

While this alternative is similar to Alternative 2 in principal, it requires no lime/limestone feedstock but rather naturally alkaline seawater, or in this case GIWW brackish water, in need a minimal alkalinity adjustment. The North Bend facility has the option to utilize various water source options nearby, including groundwater or multiple surface water bodies. Detailed discussion of these alternatives is included in Section 5. Seawater FGD would offer an approach consistent with state and federal permitting requirements and adhere to the consent decree with the US EPA. This alternative also offers a disposal method that is cost effective and poses little impact on the environment, as opposed to depositing spent scrubbing material in a landfill off site. Due to its reduced environmental impact, comparable to alternative approaches, the Seawater FGD construction alternative was determined to be the most viable option to meet the needs of this proposed project.

## 5. ALTERNATIVE SITES - WATER SUPPLY EVALUATION

In accordance with Office of Coastal Management (OCM) Coastal Use Permits Guide, which was used to develop this analysis, Ramboll conducted an alternative site evaluation for New Industrial Facilities. The facility has a scope of development larger than 5 acres; however the majority of the property development is located within a *fastlands* area, and the development is expected to have <10% impact on resources. Therefore, according to the OCM guide, this facility would be considered a Category 2, and thus required to explore a minimum of 4 alternative feasible sites.

Ramboll's alternative site evaluation was heavily dictated by water supply and access, while also taking into consideration the various impacts on environment, and geography. Each site evaluation considered impacts on water supply body including impacts to surface waters, aquifers, and wetlands as well as the feasibility of utilizing the water supply as a source of water for the FGD system. Thus, this assessment outlines various water supply options that have the potential to service the facility.

### 5.1 Alternative Site/Water Supply 1: Bayou Blue

Bayou Blue is located east of the existing facility and discharges into the GIWW via a pump system. This source was evaluated as a potential water supply source for the FGD system. Bayou Blue is a small, freshwater system that is located approximately 0.7 miles from proposed operations. Bayou Blue drains southward towards the GIWW via a pumping system located southeast of the facility. Included below is a table below that depicts the proposed design demand of the FGD system as a ratio of the Harmonic Mean Flow (HMF) and Critical Low Flow or "7Q10" of Bayou Blue. The 7-day, 10-year (7Q10) low-flow-frequency statistic is a widely used measure of surface-water availability for a given stream. For default low values, 1 ft<sup>3</sup>/s is given as the HMF, with the 7Q10 being 1/10th of the HMF in accordance with LDEQ practice. As shown in the third column, the demand significantly exceeds the reported stream flow for Bayou Blue.

<b>Table 1: Bayou Blue</b>		
<b>Ratio</b>	<b>Flows (gpm)</b>	<b>Percentage</b>
Demand / HMF <sup>1</sup>	150,000 / 448.86	33,418 %
Demand / 7Q10 <sup>2</sup>	150,000 / 44.86	334,374 %
1. HMF = Harmonic Mean Flow 2. 7Q10 = minimum seven consecutive day average stream flow with a recurrence interval of once every 10 years		

Based this evaluation and information provided in Table 1, it is quite apparent that the water supply of Bayou Blue is not a viable option, as the needed water volume greatly exceeds availability of this water source. Other concerns noted that construction of such a system in the vicinity of this Bayou would also likely result in additional wetland impact and potential impact to Bayou Teche National Wildlife Refuge.

## **5.2 Alternative Site/Water Supply 2: Groundwater Withdrawal**

The North Bend Plant currently has two 500 ft industrial water supply wells located at the facility. Evaluation for groundwater withdrawal to be an option for water supply for the FGD system was conducted through available literature and meetings with a USGS hydrogeologist.

Various negative impacts were discovered when considering groundwater withdrawal as a source of water for the system, with the Chicot aquifer being the regional option for the proposed supply. For example, concerns were raised with the vast number of daily gallons of water that could create a possible intrusion of deeper saltwater into shallow fresher water. Additionally, well field feasibility could pose potential impacts and dire drawdown affects.

Ramboll calculated the results of a scenario assuming 32 wells are pumping at 5,000 gpm (published average), spaced 400 feet apart. The well field would be withdrawing 160,000 gpm from the upper layer of the Chicot aquifer. It is important to note that when water levels drop within an aquifer at such a rate, a condition considered to be “mining the aquifer” results. Under such conditions, the matrix is damaged to the point that the sands in that withdrawn portion of the aquifer can no longer store and transmit water, overall sustainability becomes a concern.

The feasibility of the water well system must also consider the radius of depression, or cone of depression, that drops the water level not only in individual well locations but is cumulative across the entire well field. Ramboll estimated an additional 15 -20 feet of depression per well using the published mid-range values for aquifer characteristics. The overall result would thus drop the static levels in each well by another 500 feet. The result would be that water levels in certain wells would be in the lower portions of the aquifer (roughly 750 feet bgs). Even if a pump could maintain that water level, the lifting costs would be quite high.

Based on discussions with USGS, the withdrawal would likely draw attention from regional water planners, since it would represent a large percentage of the total amount withdrawn from the aquifer in the State of Louisiana. Based on available information, approximately 648 million gallons of water a day is withdrawn from the Chicot Aquifer System in Louisiana. With a daily withdrawal of 227 million gallons per day, the Birla Carbon project would represent about 35% of the state’s current daily usage.

Additional permitting would also be required of the facility for using groundwater withdrawal for a water source. This permitting is considered by LDNR as an approval process, rather than a “permit,” for allowing other users in the same aquifer to be notified and given the opportunity to raise any objections or concerns prior to approving the application. The process would also require

comprehensive groundwater modeling and testing and take anywhere from 6-8 months to complete prior to getting approval.

Based on this evaluation and the information reviewed, groundwater withdrawal as a water supply for the FGD system would not be a viable option and is not further considered in this evaluation.

### 5.3 Alternative Site/Water Supply 3: Gulf Intracoastal Waterway - Main Channel

Ramboll investigated the possibility of utilizing the GIWW as the supply water source for the FGD system. The North Bend facility was built adjacent to the GIWW, which would allow its location to be ideal for the supply. The water way averages approximately 400 to 450 feet wide, though the dimensions of the waterway vary slightly with the regional tide. Although its Harmonic Mean Flow, and its Critical Low Flow, allow for enough water to be a viable source (see Alt. 4 below), the main channel of the GIWW is a major marine transportation thoroughfare for the region.

When considering the size, shape, necessary depths, and other aspects of the intake system comparative to the USACE flow channel dimensions and regulations, it was determined that the intake structure would likely not fit within the channelized area of the GIWW without posing at least minimal risk to navigation in the area. Based on this evaluation, the GIWW's Main Channel would not be a preferred option and is not further considered in this evaluation.

### 5.4 Alternative Site/Water Supply 4: Gulf Intracoastal Waterway – Barge Slip

As stated above, the North Bend facility is built adjacent to the GIWW. The facility also owns and operates a barge slip on the GIWW that is located approximately 1,000 ft to the southwest of the main operations area, which was considered as a water supply source. The table below depicts GIWW flow characteristics:

<b>Table 2: Gulf Intracoastal Waterway (GIWW) (010803)</b>		
<b>Ratio</b>	<b>Flows (gpm)</b>	<b>Percentage</b>
Demand / HMF <sup>1</sup>	150,000 / 1,408,119	11 %
Demand / 7Q10 <sup>2</sup>	150,000 / 469,373	32 %
Demand / USGS Station <sup>3</sup>	150,000 / 3,734,964	4 %
<ol style="list-style-type: none"> <li>1. HMF = Harmonic Mean Flow</li> <li>2. 7Q10 = minimum 7 consecutive day average stream flow with a recurrence interval of once every 10 years</li> <li>3. USGS Station data from Water Data Report 07381670 GIWW at Bayou Sale Ridge from 2000-2015</li> </ol>		

Table 2 above depicts the proposed maximum design demand of the FGD system as a ratio of the Harmonic Mean Flow (HMF), Critical Low Flow or "7Q10" as derived by the Louisiana Department of



Environmental Quality via tidal flow projection calculations, and stream flow data of the GIWW as recorded by the nearby USGS station (Station ID # 07381670). Of note, the GIWW flow estimations/calculations for both the HMF and 7Q10 assume a surface area upstream from the discharge point of 94,114,258 square feet and a 12.5-hour tidal fluctuation of 1.5 feet. The GIWW was determined to be influenced by flows from the Lower Atchafalaya River, tidal impacts from the Wax Lake Outlet, and possibly other channels providing a hydrologic connection to the Gulf of Mexico. The USGS data was taken from actual flow data recorded by the USGS between 2000 and 2015, which ranged from 13,915 gpm in September of 2012 to 13,376,028 gpm in May 2011, with a mean flow of 3,734,965 gpm over the fifteen-year period. The USGS gage station referenced for the flow data used in the table above is approximately 4,300 feet downstream of the barge slip. As the third column depicts, the required FGD demand represents a minor portion of the average flow of the GIWW. For the HMF and 7Q10 tidal flow calculations, the proportion of demand flow is made further disproportionate during extended periods of lower tide levels common to the winter months and northerly winds. For the actual observed USGS stream flow however, the proportion of demand flow is but a very small fraction of the average flow of the GIWW at the North Bend Plant, estimated to be less than 5%. Nonetheless, the fact that FGD will return water to the source at comparable rates of removal makes the GIWW a viable option for sourcing water for the proposed FGD system.

## **5.5 Summary**

Analysis has shown that Bayou Blue does not have the necessary flow capacity to service the proposed FGD. Analysis also showed that the necessary amount of flow volume would not be appropriate to withdraw from the local aquifer without seriously detrimental effects to the region. Ultimately, the GIWW was looked to as a water source. The main channel of the GIWW was determined to be an inappropriate location for intake placement. Based on the options reviewed, it was determined that the North Bend barge slip was the optimal location for placement of the FGD System Intake; thus, this orientation was selected as the final action.

## 6. PROJECT JUSTIFICATION

In determining if the project should move forward as proposed, Ramboll completed a Justification Analysis of the project to determine if impacts related to the project action would outweigh the need for the benefits the project could provide.

Project actions and site development strategy have minimized potential environmental impacts, amount of waste, and cost of the overall project. Additionally, the project is subject to a consent decree in which these actions are required by USEPA and DOJ. The minimization of environmental impacts is described in Section 7, while the economic benefits and compliance issues are discussed below.

The proposed project was developed due to the recent USEPA consent decree issued related to the carbon black industry. The North Bend Facility is part of this consent decree with the USEPA to reduce emissions. Specifically, the consent decree mandates the facility must reduce Oxides of Nitrogen and Sulphur Dioxide emissions using one of the technologies specified within the agreement. Should the North Bend Facility not investigate technologies associated with the reduction of emissions, they would not be adhering to the consent decree and thus could face significant penalties, including the possibility of ceasing operations.

Thus, Birla Carbon chose to explore installation of a seawater flue gas desulfurization unit at the North Bend Facility, which is proven herein in this report as the environmental and fiscally responsible technology for the reduction of facility emissions warranted by the decree. In addition to this technology, the source of FGD is also proven to be the most appropriate and viable, given the options in the region.

Currently the facility directly employs approximately 160 personnel, while also providing opportunities for consultants and contractors from a variety of backgrounds for ongoing services. The facility's economy contribution through wages, benefits, purchases, and taxes is more than \$16,000,000 annually. Additionally, Birla Carbon is actively involved in community and public outreach on both a local and national scale. Locally, the North Bend Facility has made charitable contributions to multiple high school and sports groups including the West St. Mary High School Volleyball team, the Louisiana Canes Baseball Team, Jr. Spartan Wrestling, and the Franklin High School Volleyball team. Aside from sports and school related activities, donations have also been made to local first responders such as the Baldwin Fire and EMS. Other local charitable donations include the St. Mary Chamber of Commerce and Bonnie's Buddies MS Walk.

On a national scale, Birla Carbon is responsible for offering multiple college scholarships to students across the country. This makes the company not only significant to the economy of the area but also nationally, making impactful contributions in all the communities where they have facilities.

Should the North Bend Facility elect not to take any action, the negative impact to the region would outweigh the minimal positive benefit of avoidance of minor environmental concerns associated with the FGD construction. Additionally, this assessment outlines what mitigating measure should be implemented in order to alleviate any negative impact associated with the development and operation of the FGD Unit. Not only does this project plan to meet the requirements of the consent decree for USEPA, the economic benefits the company provides to the surrounding community will continue.

## 7. ENVIRONMENTAL IMPACTS AND MITIGATING MEASURES

Environmental impacts have been avoided where feasible and the proposed project will result in minimal environmental impact. Furthermore, mitigating measures have been developed and will be employed to offset environmental impacts as identified. Additionally, the project has been designed to operate and maintain the equipment during the installation of the sea water FGD in a manner that is environmentally responsible and that would minimize environmental impacts to the greatest extent possible. The following subsections address specific potential environmental effects, and the way these adverse impacts have been avoided and minimized to the greatest practical extent and mitigated if necessary, in more detail.

### 7.1 Air Quality

During the installation of the FGD structure and associated piping, temporary emissions of particulates may occur from equipment. In accordance with Louisiana regulations, contracted workers would employ work management practice to avoid any air quality risks possible during construction. Furthermore, the principal reasoning for this proposed project is to improve air quality through the Clean Air Act. As stated in this report, the USEPA and Birla Carbon have entered a consent decree that would require them reduce their emissions of sulfur dioxide and oxides of nitrogen. The purpose of the proposed system is to reduce those emissions from the facility by using seawater for flue gas desulfurization; the proposed system will not only abide to the consent decree but also decrease emissions and improve air quality.

Because any temporary emissions during construction that may occur would be minimal, there are no expected adverse impacts to air quality. Furthermore, because the purpose of the proposed project is to install a system that would reduce air emissions of the North Bend Facility, there is no adverse impact expected through operation. Implications would allow that, if anything, the proposed project would improve air quality on a long-term basis.

### 7.2 Waste

Due to the type of technology the North Bend Facility is utilizing for the FGD system, the amount of solid waste produced by the system would be limited to waste water addressed below. Solid waste generated during construction of the system may include wastes such as minor amounts of debris from construction. All construction wastes would be properly disposed of at facilities authorized for specific type of wastes received. Note that as previously mentioned, utilizing Seawater FGD technology greatly reduces the potential amount of waste that would be generated from a traditional scrubber system using limestone or hydrated lime.



### 7.3 Water

The proposed project involves the discharge of wastewater through the Seawater FGD system. The facility currently has an existing water discharge permit (LA0004154); the facility has sought to amend the existing permit to discharge additional waste waters from the facility under the Louisiana Pollutant Discharge Elimination System (LPDES) permit program.

Water sourced from the GIWW will be processed through the FGD scrubber and undergo its chemical processes, water from the treatment system will then be routed back to the GIWW via an outfall. Of note, Ramboll is currently working on this LPDES permit modification; this permit will be issued prior to the system becoming operational.

Additionally, a Storm Water Pollution Prevention Planning (SWPPP), including Best Management Practices (BMPs), will be developed and implemented to protect surface water bodies that traverse the site and to ensure no unauthorized discharges leave the site through storm water runoff. The North Bend facility will submit a Notice of Intent (NOI) for coverage under the Storm Water Multi-Sector General Permit for Construction Activities and all construction activities would be conducted in accordance with the General Permit terms and conditions.

### 7.4 Land

The proposed project will include 48-inch pipes crossing over a federal levee structure allowing for the intake to submerge into the GIWW barge slip, and pump water to the other side of the levee. There are no major concerns of the release of pollutants during construction or operation of the system. For crossing the federal levee, footings/foundations for piping will not be installed on the levee, but rather elevated over the levee with footings/foundations within the levee protection zone. Furthermore, Section 408 Authorization from the US Army Corps of Engineers and local levee permitting will be secured for this action prior to construction.

### 7.5 Wetlands

Ramboll performed a wetland delineation study for the proposed project area. As noted prior, the facility is located east of Highway 317 in North Bend, St. Mary Parish, Louisiana. To the north of the proposed site is the North Bend Facility, beyond which is undeveloped land used as a black bear (*Ursus americanus luteolus*) preserve that is run by Bayou Teche National Wildlife Refuge; to the south of the site is the Intracoastal Waterway; to the east is undeveloped land, and to the west is farmed and fallow agriculture land. The site contains multiple land uses, including but not limited to forested wetlands, herbaceous wetlands, agricultural land, drainage features, and a levee system.

The wetland delineation study was performed in 2018 and identified the boundaries between onsite uplands and wetlands, and areas considered likely jurisdictional to the U.S. Army Corps of Engineers (USACE). These boundaries were determined based on the extent of hydrophytic vegetation, hydric soils, and hydrologic indicators of wetland conditions as described in the *1987 USACE Wetland Delineation Manual* and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*. The wetland delineation (Jurisdictional Determination number MVN-2018-01055-SR) was issued by USACE and is attached to the Joint Permit Application. Please note that the bounds of the assessment area as depicted within the wetlands delineation and USACE Jurisdictional Determination reach beyond lands currently owned by Birla Carbon; at the time of the assessment the region was inspected for feasibility of placement of the intake structure and thus the assessment area was developed to be as widespread as possible to capture significant frontage along the GIWW.

Ramboll also evaluated the drainage patterns at the site. Based on these drainage patterns, Ramboll evaluated whether the USACE would likely assert jurisdiction over surface water features such as ditches, as well as the areas exhibiting wetlands characteristics. Wetland areas at the site are located south/southwest of the site mostly along the GIWW and its levee system, with another area located near open water off the levee system adjacent to the GIWW in a small portion of the proposed system effluent route.

The proposed project is anticipated to effect minimal wetland areas, (<0.3 acres) with the installation of the Seawater FGD. This small area will be located parallel to the effluent piping on the GIWW side of the levee system where water is discharged. These herbaceous wetlands will be impacted under the proposed plan. This small area of wetland includes vegetation characterized by a dominance of Marsh-Millet and Alligator-Weed. Many-Flower Marsh-Pennywort (*Hydrocotyle umbellata*), Variable Flat Sedge (*Cyperus difformis*), and Curly Dock (*Rumex crispus*). Additionally, a minimal amount of coverage in this area was contributed to Sugar-Berry and Southern Bald-Cypress (*Taxodium distichum*) saplings within the shrub stratum.

Impacts to the wetlands have been avoided to the greatest extent possible. Therefore, to offset the minor loss of wetland function in the area because of the proposed development, a credit purchase from a permitted mitigation bank is proposed.

## **7.6 Threatened and Endangered Species**

The United States Department of Interior Fish and Wildlife Service (USFWS) and the Louisiana Department of Wildlife and Fisheries (LDWF) have federal and state jurisdiction, respectively, over threatened, endangered and protected species in Louisiana. Potential impacts to any such species and/or their habitats identified at the proposed project area must be addressed and approval granted from these agencies prior to site development.

The USFWS and LDWF maintain a list that identifies both aquatic and terrestrial species of potential concern associated with St. Mary Parish, including species that are candidates for being listed or are currently listed as threatened or endangered. A summary of the species of concern for St. Mary Parish is provided in Table 3 below. Site assessments conducted at the proposed project site have not identified any of the species listed as candidate, threatened, endangered, or protected species. Habitat for the species listed below does not occur within the project area for the species listed therefore, no impact is anticipated for any of these species from the proposed project activities.

<b>Table 3: Summary of Candidate or Listed Threatened, Endangered or Protected Species</b>	
<b>Type of Listing</b>	<b>Species and Classification</b>
Federal Species of Concern	<p><b>Mammal:</b> West Indian Manatee (<i>Trichechus manatus</i>), Endangered</p> <p><b>Fish:</b> Atlantic (Gulf) Sturgeon (<i>Acipenser oxyrinchus desotoi</i>), Threatened</p> <p><b>Fish:</b> Pallid Sturgeon (<i>Scaphirhynchus albus</i>), Endangered</p> <p><b>Bird:</b> Piping Plover (<i>Charadrius melodus</i>) Threatened</p> <p><b>Bird:</b> Red Knot (<i>Calidris canutus</i>) Threatened</p> <p><b>Reptile:</b> Green Sea Turtle (<i>Chelonia mydas</i>) Threatened</p> <p><b>Reptile:</b> Hawksbill Sea Turtle (<i>Eretmochelys imbricate</i>) Endangered</p> <p><b>Reptile:</b> Leatherback Sea Turtle (<i>Dermochelys coriacea</i>) Endangered</p> <p><b>Reptile:</b> Kemp's Ridely Sea Turtle (<i>Lepidochelys kempii</i>) Endangered</p> <p><b>Reptile:</b> Loggerhead Sea Turtle (<i>Caretta caretta</i>) Threatened</p>
Terrestrial State Species of Concern	<p><b>Mammal:</b> Louisiana Black Bear (<i>Ursus americanus luteolus</i>), Rare Occurrence in St. James Parish, Threatened</p> <p><b>Bird:</b> Bald Eagle (<i>Haliaeetus leucocephalus</i>), Known Occurrence in St. Mary Parish, Endangered</p> <p><b>Bird:</b> Gull-Billed Tern (<i>Gelochelidon nilotica</i>), Known Occurrence in St. Mary Parish</p> <p><b>Bird:</b> Snowy Plover (<i>Charadrius alexandrinus</i>) Threatened</p>
Aquatic State Species of Concern	<p><b>Fish:</b> Pallid Sturgeon (<i>Scaphirhynchus albus</i>), Known Occurrence in St. Marys Parish, Endangered</p>

## 7.7 Cultural and Historic Resources

The subject site has not been subject to a Cultural Resources Survey. The potential for the occurrence of historic resources should be considered relatively low. The nearest recorded historic site is North Bend Plantation (16SMY66-16SMY132), which is located on Bayou Sale west of LA 317 and north of the GIWW. Impacts to historic resources are not anticipated. If it is determined that the site will need a cultural and historic resource assessment, a formal review will be conducted by an archaeologist in order to determine cultural and historic resources that need to be mitigated or avoided through the construction process.

## **7.8 Emergency Preparedness and Response and Infrastructure**

To ensure the facility is prepared in the unlikely event of emergency, the North Bend Facility will ensure emergency response services are available, robust, and timely. The North Bend Facility will coordinate with the local emergency response providers as appropriate to assure highly qualified fire and containment response services are available, if needed.

## **7.9 Floodplain**

The entire footprint of the project area of work occurs within the 100-year floodplain. However due to the large amount of agriculture land surrounding the area, and the minimal size of the projected work area, no impacts to the floodplain are anticipated during the project activities.

## **7.10 Infrastructure**

Operators of the North Bend Facility are coordinating with the local and regional providers regarding infrastructure and support facilities, such as roads, railroads, sanitary water, and electricity, as well as existing pipelines. Adverse impacts resulting from construction are not anticipated.



## 8. HYDROLOGIC MODIFICATION IMPACT ANALYSIS

Recent regulatory changes within the LDNR permit review process have included the implementation of the Hydrologic Modification Impact Analysis (HMIA) in order to ascertain the degree of impacts a project may have on surface waters. Such an analysis is required in order to determine if mitigating measures are needed in order to ensure surface water quality. Of note, although the FGD system includes the pumping and discharge of source water from the GIWW, this action is specifically an LDEQ LPDES regulated activity and is thus not further discussed herein. The impact analysis provided below focuses on hydrological modifications that result from construction of the system, not operation. Therefore, based on the above information and recently issued LDNR guidance the proposed project is considered a HMIA Level 2 – Intermediate Modification. All applicable mapping of the facility and construction is included in Figures 1-16 attached to this application. Specifically, Figure 16 depicts existing and proposed water flow patterns.

### 8.1 Storm Water Runoff

In completing this impact analysis, Ramboll used a 10-year design storm event to calculate potential impact to runoff based on construction of the FGD System and associated work areas. Below is a table showing rough acreage of developed and undeveloped lands within the proposed work areas as the property currently exists (refer to Figure 2 within the application package).

<b>Table 4: Work Areas Planned for Construction (Current Condition)</b>			
<b>Work Area ID</b>	<b>Developed Acreage</b>	<b>Undeveloped Acreage</b>	<b>Total Acreage</b>
Work Area 1	1.75	2.62	4.37
Work Area 2	0.15	1.30	1.45
Work Area 3	0	1.61	1.61
Work Area 4	6.89	14.61	21.50
Work Area 5	0.47	1.32	1.79
<b>Total</b>	9.26	21.46	30.72

Table 4 depicts that a total of 30.72 acres should be considered for runoff calculations resulting from the proposed construction activities. Ramboll used rain event records of North America for a 10-year storm, arriving to a total of 9 in per day (or 0.375 in per hour). This gives representation of runoff from the developed area discharging to surrounding ditches that eventually channel eastward along the north side of the levee. All runoff eventually flows to the pump station to the east of the proposed construction site. To determine the total runoff rate, Ramboll explored two surfaces for runoff: the current undeveloped land, and to be relatively conservative in our estimate accounted for the developed areas to be composed of crushed aggregate, with runoff coefficients of 0.25 and 0.85 respectively. To deduce the peak runoff flow, each parameter in Table 5 below was multiplied to arrive at the totals.

<b>Table 5: Current Runoff Volumes</b>				
<b>Type of Surface</b>	<b>Runoff Coefficient</b>	<b>Daily Rainfall (in./hr)</b>	<b>Total Acreage</b>	<b>Peak Runoff Flow (ft<sup>3</sup>/s)</b>
Undeveloped land (current condition)	0.25	0.375	21.46	2.012
Concrete (conservative)	0.85	0.375	9.26	2.952
<b>TOTAL</b>			<b>30.72</b>	<b>4.964</b>

The vast majority of the design will incorporate permeable surfacing such as aggregate or natural ground cover in and around the proposed Flue Gas Desulfurization (FGD) system to maintain as much of the original site's hydrology as possible. Ancillary structures such as concrete footings or driveways will require use of concrete or other impermeable surfacing, though the project team anticipates this to be minimal. Following construction, final stabilization of the project footprint and surrounding area with seeding will restore the area to its pre-development runoff characteristics and will aid in removing sediment from runoff to offsite receiving streams. No ponds or retention basins are planned at this time for temporary storage of site runoff as the surrounding ditch system is anticipated to handle the increase in discharge following installation of the FGD system. As shown in Table 6 below, the runoff volumes will increase by approximately 8%. However, regional ditches that discharge to Bayou Blue, and then to the Gulf Intracoastal Water Way are anticipated to be sufficient to handle this minor increase in volume.

<b>Table 6: Proposed Runoff Volumes</b>				
<b>Type of Surface</b>	<b>Runoff Coefficient</b>	<b>Daily Rainfall (in./hr)</b>	<b>Total Acreage</b>	<b>Peak Runoff Flow (ft<sup>3</sup>/s)</b>
Crushed Aggregate (gravel)	0.3	0.375	21.46	2.414
Concrete (conservative)	0.85	0.375	9.26	2.952
<b>TOTAL</b>			<b>30.72</b>	<b>5.366</b>

As stated, Ramboll will develop and implement a SWPPP including BMPs to protect surface water bodies that traverse the site and to ensure no unauthorized discharges leave the site through storm water runoff prior to beginning any construction activities. Additionally, Ramboll has submitted a Notice of Intent to the LDEQ on Birla's behalf for coverage under the Storm Water General Permit for Construction Activities and all construction activities will be conducted in accordance with the General Permit terms and conditions. This Notice of Intent was submitted on February 20, 2020.

## 8.2 Dredge Spoil Dewatering

During dredging operations, dredge spoils will be pumped from the waterward side of the levee into the containment basin in the northeast portion of the property, as depicted within Figure 2 within the attached drawings. The pumping system will be temporarily installed only during dredging operations. As such the routing of the water lines across upland areas to the dredge deposit area will be determined at the time of dredging. The most appropriate routing of the overland flexible piping / tubing will be dependent upon construction and plant operations at the time.

This dredge spoil area with ring levee containment will hold dredge material during dredging events. While a significant amount of water within the dredge material is anticipated to be lost to evaporation, the potential for discharge of dredge waters to the local drainage system exists. Therefore, this discharge will be managed through installation of a weir at the appropriate elevation within the ring levee. Best management practices (BMPs) related to discharge will be installed in a multi-layered approach to sediment reduction. Surface skimming devices, hay bales, check dams, etc. may be used as necessary. These BMPs will ensure that dredge material discharge will not surpass appropriate thresholds for sediment composition.

The discharge structure will be installed within the ring levee on the east side of the dredge disposal area. From this location it will drain directly to an existing sugarcane field ditch that flows southwesterly along the proposed project's eastern boundary adjacent Work Area 3. This ditch continues southwest to the existing ditch on the north side (landward side) of the levee. From this point the ditch waters flow southeasterly to the Bayou Blue pumping station, where it will then be pumped over the levee to the ICWW. Thus through these measures the dredge disposal material discharge is not anticipated to affect water quality within the immediate vicinity of the site or in the region.

## 9. SUMMARY AND CONCLUSIONS

The evaluation performed for this proposed FGD system installation includes a review of any possible coastal resource and environmental impacts. Additionally, it explains the economic and social benefits that would be impacted should there be no system installation. All measures taken, as outlined in this report, have been done with the intent to minimize all adverse impacts on environment and be cost efficient. The development of the system and its processes, as well as the construction and installation have all been carefully considered and compared to alternatives that proved to not be viable options. It is the understanding that Ramboll has prepared this Needs, Alternatives and Justification Analysis accordingly and with all considerations in mind.

The project would result in the unavoidable loss of approximately 0.33 acres of federally jurisdictional wetlands. Appropriate wetland mitigation will be provided in accordance with federal requirements to address this impact through a high quality compensatory project using an approved mitigation bank.

The proposed project would not only provide environmental and economic benefits, but also meet newly imposed regulatory standards for reduction of air emissions. While Birla Carbon has a large presence in the state, they have demonstrated a significant commitment to community locally, and across the United States. The facility provides substantial economic benefits on local and national levels through wages, taxes, and benefits of its locally hired workers and consultants. The key benefit of this proposed project comes from a regulatory standpoint. The North Bend Facility would not only adhere to the consent decree imposed by state and federal regulators, but they would do it in the most environmentally and economically supportive way.

In sum, after multiple evaluations of technologies and methods, there are no alternative methods that would result in a less adverse impact while still meeting the needs of the public and the facility. It is clear that using the Seawater FGD system, will allow the North Bend Facility to reduce emissions, decrease potential solid waste generation, and provide minimal adverse environmental impact. Given these facts as detailed and documented herein, this evaluation clearly demonstrates that the benefits of the proposed coastal use clearly outweigh the minor environmental impacts to public resources resulting from that use.